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Conduct of Engineering Glossary

1.0 Purpose and Scope

This Conduct of Engineering Functional Series Document (FSD) provides a single location for the most-common acronyms and definitions of terms used in other CoE FSDs (e.g., Engineering Standards, Administrative Procedures–APs, Qualification Standards), whose purpose is to ensure that definitions in these documents are consistent and centrally accessible.

As such, the over 800 entries contained herein are the governing definitions across all Functional Series and other Local Documents issued by the PD340 institutional Facility Conduct of Engineering (CoE) program[1], superseding those where they may conflict.

Finally, while not its main purpose, it may be useful to other engineering activities at LANL as well, such as non-nuclear programmatic or R&D engineering.

Scope details:

A. CoE: The LANL Engineering Standards Manual, Master Specifications, and similar documents contain additional definitions judged too narrow interest to include herein.

B. LANL: Many other listings and sources exist; however, follow GLOS-COE-1 preferentially to them where they conflict. Examples: Policy Office maintains LANL Definition of

[1] I.e., documents implementing PD340, *Conduct of Engineering and Configuration Management for Facility Work,* and its subordinate P-series policy procedures.

Terms; P315-4, *Conduct of Operations Glossary of Terms and Acronyms*; *ASM Acquisition Dictionary* here.[2]

1. Exception: Terms from Institutional Policy documents (i.e., SD, PD, P, RN) are included herein for convenience; however, those sources govern as terms and definitions herein may not align. In the case of meaningful difference, follow the most conservative and/or contact CoE for direction per Section 3.0.

C. DOE: Many DOE directive definitions are here. Several additional definitions exist within the mandates (Orders, CFRs) and guidance (Guides, Standards, Handbooks). The Project Management Lexicon of Terms exists for that scope. All such sources govern when LANL contractual, with some terms included herein for convenience.[3]

D. Beyond DOE: Other sources used include the NRC's Glossary.

2.0 Authority

This functional series document is issued by the Conduct of Engineering program implementation at the Laboratory. This document derives from PD340, *Conduct of Engineering and Configuration Management for Facility Work.*

- Issuing Authority: Engineering Services Division Office (ES-DO)
- Responsible Manager: Conduct of Engineering Office Director
- Responsible Office: Conduct of Engineering Office (CoE or CENG)

3.0 Assistance, Suggestions, and Exception or Variance

For suggestions or clarification, enter request into the "CoE Glossary and Engineering Standards Comments/Suggestions" SharePoint tool (link atop each ESM chapter) with GLOS-COE-1 as the "Chapter or Document" number.

Otherwise (e.g., if outside firewall), contact the most appropriate Conduct of Engineering Office program team:

- Engineering Standards, P342, and general terms: engstandards@lanl.gov
- Engineering Processes (e.g., APs and P341): coe-aps@lanl.gov
- Engineering Training (e.g., Qualification Standards and P343): es-do-tng@lanl.gov.

For formal variance or exception — and only with prior concurrence of the manager of the most-affected program given above — use LANL Form 2137, *Conduct of Engineering Request for Variance or Alternate Method* to request formal exception or variance from definitions herein.[4]

[2] *LANL Definitions* is informal (e.g., without bases, change control) and outside COE purview; *ASM Dictionary* appears legacy.
[3] Prime contract supersedes implementing contractor policy. When further direction is needed, contact CoE per Section 3.0
[4] Variance authority is at the same level as the program document, thus ES-DO via Form 2137 only required for requirement/direction matters at the AP, ESM, or TSM level (and CENG may opt to revise Glossary instead of 2137 approach). For derivative documents (e.g., master specs, Std. details, CSM, many forms and templates), Section 3.0 manager written direction is sufficient (aligns with ESM Ch. 1 Z10 on "Clarifications…"). Guidance (typically italics) is not requirement/directive in nature so formal relief is not necessary.

4.0 Common CoE Acronyms and Abbreviations

The two-column-layout listing below is generally useful and entries will often also be a term in the glossary table that follows this one (some are hyperlinked to that general area of the Glossary or to a relevant webpage). These terms/meanings are also the CoE-preferred usage.

Useful (and mandatory in some cases) listings elsewhere include:

A. LANL Acronym database (from CEA-TEA); P315-4, *Conduct of Operations Glossary of Terms and Acronyms*

B. LANL CoE:

1. CoE/EDRMS "document type" abbreviations such as MLD in AP-341-402 Att. A (with centrally assigned doc number subset here),
2. Item numbering and labelling IDs for OpSystem & System and Equipment/Component per ESM Ch. 1 Section 200 Att. 1 workbook's 210 and 230 tabs respectively, and
3. Drawing abbreviations on Standard Detail ST-Z1040-1 and CSM Section 300.

C. DOE: Directives-based Acronyms (paired with the Definitions tab), OPM Project Management Lexicon of Terms; various other documents (e.g., for safety basis, DOE-STD-3009 Master Acronyms List)

D. NRC: NUREG-0544, "Collection of Abbreviations"

E. VCS: Those in voluntary consensus codes & standards (e.g., ASME Y14.38, IEEE 803.1-1992).

Term	Meaning
AdSTR	Administrative Subcontract Technical Representative
A/E or AE	Architect/Engineer firm
AHJ	Authority Having Jurisdiction
ALD	Associate Lab Director (or Directorate)
AP	Administrative Procedure
ASM	Acquisition Services Management
ASME	American Society of Mechanical Engineers
BAS	Building Automation System
BOM	Bill of Materials
BOP	Balance of Plant
BIM	Building Information Model, or Modeling
CD-#	Critical Decision
CENG	Conduct of Engineering
CGD	Commercial Grade Dedication
CGI	Commercial Grade Item
CGS	Commercial Grade Service

Ch.	Chapter
CFR	Code of Federal Regulations
CM	Configuration management
CMMS	Computerized Maintenance Management System
CMOS	The Chicago Manual of Style
CMTR	Certified Material (or Mill) Test Report
C of A	Certificate of Analysis
CoC	Certificate of Compliance
C of C	Certificate of Conformance
CoO	Certificate of Occupancy
COO	Chief Operations Officers (or Office, in ALDWP)
COE or CoE	Conduct of Engineering
COR	Code of Record
COTS	Commercial Off-The-Shelf
CRA	Contractor Readiness Review
CRD	Contractor Requirements Document (in a Directive)
CSE	Cognizant System Engineer

CSED	Criticality Safety Evaluation Documentation
CSI	Construction Specifications Institute
CSM	LANL CAD Standards Manual
Cx	Commissioning
CxA	Commissioning Agent
CY	Calendar Year
D&D	Deactivation (aka decommissioning, possibly with decontamination) and demolition
DA	Design Authority
DAR	DA Representative
DCF	Design Change Form
DI	Desktop Instruction
DID	Defense in depth
DNFSB	Defense Nuclear Facilities Safety Board
DOE	Department of Energy
DPIRC	Design Professional in Responsible Charge
DRN	Design Revision Notice
DPR	Design Package Reviewer
DSA	Documented Safety Analysis
DV	Design Verification
DWG	Drawing (also, AutoCAD files extension is .dwg)
EDA	External Design Agency
EIL	Equipment and Infrastructure List
EDRMS	Electronic Document and Records Management System
EO	Executive Order
EOR	Engineer of Record
EPP	Environmentally Preferable Products
ERFI	Engineering Request for Information
ES	Engineering Services Division
ESR	Engineering Service Request
ESS	Evaluation of Safety of the Situation [SBP-112-3-R5.3]
ESM	STD-342-100, the Engineering Standards Manual (LANL)
EWB	Engineering Workbench
Exh.	Exhibit (ASM subcontracts)
EXID	Excavation/Fill/Soil Disturbance Permit Request

FA	Functional Assessment
FAR	Federal Acquisition Regulation
FCR	Field Change Request
FDA	Facility Design Authority
FDAR	FDA Representative
FDD	Facility Design Description
FEM	Facility Engineering Manager
FIMS	Facilities Information Management System (DOE)
FM	Form (LANL CoE), or Factory Mutual Insurance Company (FM Global)
FMEA	Failure Modes and Effects Analysis
FOD	Facility Operation Directorate (or Director)
FORR	Federal Operational Readiness Review
FRA	Federal Readiness Assessment
FRD	Functional and Requirements Document
FSD	Functional Series Document
FSR	Facility Service Request
FY	Fiscal Year
G	Guide (DOE document type)
GFE	Government Furnished Equipment
GPP	General Plant Project
HC	Hazard Category
IAPMO	International Association of Plumbing & Mechanical Officials
IAS	Integrated Assessment Schedule
IBC	International Building Code
ICC	International Code Council
ICE	Independent Cost Estimate
IDID	Important to Defense-in-depth
IDIQ	Indefinite Delivery, Indefinite Quantity (contract)
IEBC	International Existing Building Code
IESL	Institutional Evaluated Suppliers List
IFC	Issued for Construction
IHS	Industrial Hygiene and Safety (ESH group); former name of Accuris (online standards)
IM	Issues Management

IPT	Integrated Project Team
IRT	Integrated Review Tool
ISD-TS	Infrastructure Service Division Telecommunications Services
ITR	Interdisciplinary Technical Review
IVR	Implementation Verification Review
IWD/WCD	Integrated Work Document / Work Control Document
JCO	Justification for Continued Operations
LANL	Los Alamos National Laboratory
LANS	Los Alamos National Security (now Triad/TNS)
LEBC	LANL Existing Building Code
LEED	Leadership in Energy and Environmental Design
LBC	LANL Building Code
LBO	LANL Building Official
LCA	LANL Commissioning Authority
LCC	Life-cycle cost
LCO	Limiting Condition of Operations
LMS	STD-342-200, the LANL Master Specifications
LS	Limit State (structural)
LSME	Lead SME
M&TE	Measuring and Test Equipment
MDI	Mission Dependency Index
MEL	Master Equipment List
ML	Management Level
Mod	Modification
MSA	Management Self-Assessment
MSS	Maintenance and Site Services (Manufacturers Standardization Society for pressure safety)
MTOA	Master Task Order Agreement
MW	Mixed Waste
NAR	New activity review request; FNAR may be facility NAR
NCR	Nonconformance Report
NCS	Nuclear Criticality Safety
NDC	NPH Design Category
NDE	Nondestructive Examination
NDT	Nondestructive Testing

NEC	National Electrical Code (NFPA 70)
NFPA	National Fire Protection Association
NI	New Information (safety basis)
NIE-TS	See ISD-TS
NMAC	New Mexico Administrative Code
NMC&A	Nuclear Material Control & Accountability
NNSA	National Nuclear Security Administration
NPH	Natural phenomena hazard
NSE	Nuclear Security Enterprise
NZE	Net-zero emissions (building)
O	Order (DOE document type)
O&M	Operations and Maintenance
OBI	Owners Building Inspector
OFI	Opportunity for Improvement
OHC	Other Hazard Controls
ORR	Operational Readiness Review
OSH-ISH	Occupational Safety and Health, Industrial Safety and Hygiene (LANL Group)
P&A	Process and Automation
Para	Paragraph
PC	Performance Category (NPH)
PdM	Predictive Maintenance
PE	Project Engineer, but may be Professional Engineer
P.E.	Professional Engineer
PEL	Project Equipment List
PFE	Plutonium Facilities Engineering
PIE	Plutonium Infrastructure Engineering
PISA	Potential Inadequacy of the Documented Safety Analysis
PIT	Post-Installation Testing
PM	Project Manager or Management, or Preventive Maintenance
PMI	Preventive Maintenance Instruction
PMT	Post-Modification/Post-Maintenance Testing
POC	Point of Contact
PPD	Preliminary Project Determination
PQR	Procedure Qualification Records

P-QSME	Procurement Quality Subject Matter Expert
PRD	Project Record Document, or (for large projects) Program Requirements Document
PrE	Process Engineer
PRID	Permits and Requirements Identification
PRV	Pressure Relief Valve
PSE	Plant System Engineer
PSE-IM	Program Strategy and Execution–Information Management
PT	Dye-Penetrant Testing
PtE	Procurement Engineer
PWHT	Post Weld Heat Treatment
QA	Quality Assurance
QC	Quality Control
QIA	Qualified Inspection Agency (or Agent)
QS	Qualification Standard
R&D	Research and Development
R2A2s	roles, responsibilities, authorities, and accountability
RA	Readiness Assessment
RC	Risk Category (IBC)
RCD	Requirements and Criteria Document
RE	Responsible Engineer
RFP	Request for Proposal
RFI	Request for Information
RLM	Responsible Line Manager
RP&IE	Real Property and Installed Equipment
RPP	Reduced-pressure-principle (e.g., backflow preventer)
RT	Radiographic Examination
RS	Risk Significant (software)
RVM	Requirements Verification Matrix
SB	Safety Basis
S/CI	Suspect or counterfeit item
S&CL	Standards & Calibration Lab
SC	Safety Class (SSC)
SD	Sustainable Design
SDD	System Design Description
SDDR	Subcontractor Deviation Disposition Request

SE	Systems Engineer(ing)
Sect or §	Section
SEMP	Systems Engineering Management Plan
SEP	Systems Engineering Plan
SER	Safety Evaluation Report
SHADS	Safety and Hazard Analysis Software
SHR	System Health Report
SI	Special Inspection
SIA	Special Inspection Agency
SI-DCRM	Service Innovation-Document Control Records Management (now PSE-IM)
SIS or SSIS	Safety Significant Instrumented System
SLC	SpecLink Cloud
SMACS	Safety Management and Administrative Controls Software
SME	Subject Matter Expert
SMPO	Safety Management Program Owner
SO	Software Owner
SOW	Statement of Work
SPOC	Software Point of Contact
SQA	Software Quality Assurance
SRLM	Software Responsible Line Manager
SS	Safety Significant (SSC)
SSC	Structure, System, or Component
SSI	Statement of Special Inspections
STD	Standard (DOE or LANL document type)
STR	Subcontract Technical Representative
SU	Software User
SWAU	Software Approval/Approved for Use
UL	Underwriters Laboratories
UT	Ultrasonic Examination
T&Q	Training and Qualification
TAC	Test Acceptance Criteria
TIA	Test & Inspection Agency
TEAP	Technical Evaluation and Acceptance Plan
TIP	Test & Inspection Plan
TNS	Triad National Security, LLC

TPC	Total Project Cost
TPS	Technical Project Specialist
TRB	Test Review Board
TSM	Tailored Standards Manual
TSRs	Technical Safety Requirements
UMC	Uniform Mechanical Code (IAPMO)
UPC	Uniform Plumbing Code (IAPMO)
UOS	Unless otherwise specified
USI	Unreviewed Safety Issue
USQ	Unreviewed Safety Question

USQD	USQ Determination
VAR	Variance or Alternate Method Form 2137 document type
VBE	Virtual Built Environment
VCS	Voluntary Consensus Standard
VFD	Variable Frequency Drive
VSS	Vital Safety System
VT	Visual Examination
WI	Work Instruction
WPS	Welding Procedure Specifications

5.0 Glossary Definitions and Usage

A. Source citations (e.g., "[AP-341-703]") generally capture the main, historical location(s) of the definition and/or usage of same. Going forward, most of the CoE-issued documents will be revised to reference this glossary as follows:

1. Mirroring of glossary definitions in certain construction documents and their CoE templates may be appropriate when end-user reference to GLOS-COE-1 may not be preferable (e.g., drawings, specifications, inspection plans).

   a. Mirroring of glossary definitions in CoE-issued documents in addition to referencing will be avoided unless determined necessary (e.g., in "ii" below).

   b. Definitions may be included in design output templates such as the LANL Standard Details; Master Spec (LMS) 01 4216 *Definitions* and 01 4000 *Quality Requirements*; and ESM Ch. 16's *Statement of Special Inspections* and *Test & Inspection Plan*.

B. Usage notes, generally in italics (as are many titles) and document/source citations (e.g., […]) are normally not part of the definition per se.

C. Hyperlinks often lead to the general area of a related term or webpage. LANL-internal links will fail outside the firewall, but linked documents may be provided by the LANL's project interface personnel as appropriate.

D. A few of the most-common short citation terms in Section 6.0 follow.

Most-Common Citations	Full Title and/or Meaning
10 CFR 830	10 CFR 830, *Nuclear Safety Management*
ESM	STD-342-100, the *Engineering Standards Manual*, chapter (Ch.) and sections (e.g., Z10) as indicated
LMS	STD-342-200, the *LANL Master Specifications*
NQA-1	ASME NQA-1-2008 with the NQA-1a-2009 addenda, *Quality Assurance Requirements for Nuclear Facility Applications. Available via Accuris EWB.*

SD330	*LANL Quality Assurance Program*

6.0 Glossary

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z

Term	Definition
A	
Acceptance Method	A dedication method used to verify that the Commercial Grade item or service meets the acceptance criteria for the identified critical characteristics. (Paraphrased from ASME NQA-1a-2009 Subpart 2.14.) The acceptance methods used in the Commercial Grade Dedication (CGD) process are: • Method 1: Inspections, tests, or analysis performed after delivery. • Method 2: Commercial grade survey of the supplier. • Method 3: Source verification of the item or service. • Method 4: Acceptable supplier/item performance record. [AP-341-703]
Acceptance Testing, aka software validation	The process of exercising or evaluating a system or system component by manual or automated means to ensure that it satisfies the specified requirements, and to identify differences between expected and actual results in the operating environment. [ESM Ch. 21, SOFT-GEN]
Accuris	Provider of most online national and international codes and standards mostly commonly used at LANL via their Engineering Workbench (EWB) product. Formerly "IHS." *See also available non-EWB standards including IEEExplore for non-NFPA electrical, electronics, software. LANL Research Library catalog search will also yield a few full-text standards and reports not in above from Knovel and other databases they provide.*
Acquired Non-SSC software	Non-SSC software that is acquired software where the code cannot be changed other than through replacement. This may also be referred to as Read-Only Non-SSC software. Replacement includes replacement with a subsequent software version or upgrade. [ESM Ch. 21, SOFT-GEN]
Acquired software	Software that is generally supplied through basic procurements, two-party agreements, or other contractual arrangements. Acquired software includes off-the-shelf (OTS) software such as operating systems, database management systems, compliers, software development tools, and commercial calculational software and spreadsheet tools. Downloadable software that is available at no cost to the user (referred to as freeware) is also considered acquired software. [ESM Ch. 21, SOFT-GEN]
Active SSC	An SSC that includes one or more components that must change state to perform its safety function. [AP-341-901]
Addition	An extension or increase in floor area, number of stories, or height of a building or structure. [ESM Ch. 16 IBC-GEN PPD form FM01.] *Must follow IEBC Ch.11.*

Term	Definition
Administrative Change	1. A change to a document that is correcting typographical errors, grammar, punctuation, and clarifying instructions. Updating organizational names, hyperlinks, and reference document numbers also is considered an administrative change. [AP-341-401] 2. In DOE orders, changes that do not alter requirements or responsibilities in the affected directive. Examples of such changes are: a. typographical errors; b. nomenclature changes such as changes to organization names or titles of officials; c. clarifications that do not alter requirements or responsibilities; or d. changes to legal citations or references. [DOE O 251.1D AdmChg1]
Administrative Controls	1. Provisions relating to organization and management, procedures, record keeping, assessment, and reporting necessary to ensure safe operation of a facility. [10 C.F.R. § 830.3; ESM Ch. 21, SOFT-GEN] 2. Work procedures such as written safety policies, rules, supervision, schedules, and training with the goal of reducing the duration, frequency, and severity of exposure to workplace hazards. [DOE G 450.4-1C, Integrated Safety Management System Guide]
Administrative Procedure (AP)	1. Defines the communication and coordination activities necessary to carry out a facility's technical programs, management control programs, and design control programs. These procedures are not directly used to operate or maintain equipment or facilities. [PD311] 2. Prescribes the steps to be used by personnel in carrying out administrative work activities. Procedures implement policy, requirements, and good business practices. CoE APs are a type of Functional Series Document. [AP-341-401] *In CoE, the 341 series is ubiquitous; the project management 350 series is in EDRMS while MSS's AP-MNT and AP-WORK APs here are also relevant to CoE.*
Administrative Subcontract Technical Representative (AdSTR)	Appointed to perform Technical Oversight of low-consequence subcontracts, engages LANL SMEs as appropriate and provides feedback to their [Procurement Specialist (PS)], Requesting Organization, and RLM with issues pertaining to subcontract performance. [P850]
ALARA	As Low as Reasonably Achievable. An approach to radiological control to manage and control exposures (individual and collective) to the work force and to the public at levels that are as low as is reasonable, taking into account social, technical, economic, practical, and public policy considerations. ALARA is not a dose limit but a process which has the objective of attaining doses as far below the applicable limits of 10CFR835 as is reasonably achievable. [ESM Ch. 11, F1030.50]
Alteration	Any construction or renovation to an *existing structure* other than a *repair* or *addition*. [IEBC-2021]. *See also Level 1, 2, and 3 Alterations.*

Term	Definition
Applicable Standard	An applicable DOE technical standard or industry code or standard is one for which it has been determined by the contractor [LANL] that it will be used or will be applied for a specific facility/site to meet the design, construction, and operational requirements described in this Order. [DOE O 420.1C Chg 3, Section 7]. *The LANL Engineering Standards, including ESM and TSM, provide the minimum required codes and standards derived from contractual DOE and NNSA directives; projects should add other others where appropriate.*
Associate Laboratory Director for Facilities & Operations (ALDFO)	LANL organization home of the Facility Design Authorities and their respective divisions [e.g., Engineering Services (ES) and Plutonium Facilities Engineering (PFE)], Plutonium Infrastructure Engineering (PIE), Fire Protection Office, others. *Of the ~17 ALDs, ALDFO engineers have the most frequent interaction with ALDICP (Infrastructure and Capital Projects) and/or ALDPI (Plutonium Infrastructure) depending on role.*
Allocation	The process of assigning requirements to appropriate SSCs that will fulfill the requirement. This may include functional analysis to simplify the allocation process. [ESM Ch. 20]
All-the-Time Functions	Those that identify actions that must be considered at each precursor-level function as drivers for the identification of applicable requirements. These functions are generated based on performance or operational needs but are also based on programmatic drivers. Typical areas that result in all-the-time functions are Safety, Environment, Security, and Quality Assurance. [AP-341-601]
Alternate Calculation	A Design Verification method that uses an alternate calculation method to verify correctness of the original calculation or analysis. (ASME NQA-1) [AP-341-620]
Alternate Method	Alternative to how a requirement is met in cases where the "how" is specified, as granted by the requirement owner. These represent acceptable, alternative approaches to achieving the goal of a requirement. [adapted from DOE O 252.1D Chg 1]. *Applies to Form 2137,* Conduct of Engineering Request for Variance or Alternate Method*. See also Exception and Variance*. [ESM Ch. 1 Z10]
Alternate Study	See Trade Study
Applicable Standard	Per DOE O 420.1C, an applicable DOE technical standard or industry code or standard is one for which it has been determined by the contractor [e.g., LANL/Triad] that it will be used or will be applied for a specific facility/site to meet the design, construction, and operational requirements described in this Order. *The Order provides the process for determining which standards will be applicable; the LANL Engineering Standards provide the broad minimums while a project-specific code of record list focuses on and may add to them.*

Term	Definition
Approved for Release	Design output signature accepting for LANL. *It may and should also be attesting output accurately reflects the design basis and followed a technically adequate design process and appropriate design control; however, where permitted by CoE, these design authority (FDAR) responsibilities from DOE-STD-1073-2016 (§2.5) may be indicated by FDAR signature elsewhere (e.g., a drawing set G sheet or DCF signature at FM01/19 §8.0 Modification Final Design Approval). When not the FDAR on individual documents, outputs should be signed by the person with the best knowledge to affirm the above as chosen by the FDAR — this may be the system engineer, project engineer, or Modification Manager heading the effort. LANL Permitting Authority signature field on SSIs (e.g., IBC-IP Att. B r15) is a similar concept attesting to adequacy of SME review and comment resolution. [CSM Table 202-1; P341 (§3.0, 3.4)]*
Approved for Use (AFU)	New or modified system review/approval process in P101-34, *Pressure Safety*. *Replaces Certification approach of ESM Ch. 17 former Section ADMIN-1 before 9/22/2023.*
APROOVE	Online document review software (replaced DRS).
ARCHIBUS Web Central	Space management tool used at LANL. *Besides employee hoteling support, contains structure data including seismic: Go to Space Inventory, then LANL Special Reports, then Define Seismic Data. Type TA-BLDG: (i.e. _ _-_ _ _ _) under Structure ID, then return. You will see the newer RC or NDC/LS data should also be there under the "DOE 1020 Standard" heading. The legacy PC category is under Seismic Essential as P_ (e.g., P1, P2 …, where P2=PC2) for the building structure.*
Architect/Engineer (A/E) or Architect-Engineer (AE)	A design agency of record, normally external to LANL. Generally synonymous with Engineer of Record (EOR) and Design Professional in Responsible Charge (DPIRC). [ESM Ch. 1, Z10]
Ariba®	ASM's procurement software tool from SAP.
As-Built	Important documentation (e.g., electrical one-line diagrams, database records) that is (1) verified by physical inspection as depicting the actual physical configuration and (2) verified as consistent with the design requirements. [based on DOE-STD-1073-16 and AP-341-405; AP-341-610]. These are a subset of the entirety of Project Record Documents (PRDs). PRDs not an as-built are therefore just as-designed; however, inspection provides some assurance of that. [ESM Ch. 1, Z10]; *see Z10 for more information.*
As-Found	Information often in the form of marked-up documents that reflects the actual physical configuration and identifies any discrepancies with currently approved facility documentation. [DOE-STD-1073-2016; AP-341-405] *Note: As-founds are generally the product of a walkdown (e.g., tech baseline reconstitution). If high pedigree is needed, then Step 2 in As-Built process is also required.*
Asset	A general term used to refer to a system, facility, structure, or component. This term is commonly used in the SE tool to refer to the block object type used to represent SSCs. [ESM Ch. 20]

Term	Definition
Associated Management Level (software)	The highest management level of an SSC that is associated with the software function. The software function must be required for and/or the software failure will have an adverse effect on the SSC. [ESM Ch. 21, SOFT-GEN]
Authenticated Electronic Signatures (aka Digital Signature)	1. Digital Signature: An electronic signature comprised of encrypted identification certificates. When properly implemented, provides a mechanism for verifying origin authentication, data integrity and signatory non-repudiation (e.g., PIV/CAC certificates). [DOE O 243.1C CRD; P1020-1] 2. These include Entrust and Adobe digital signatures with certificates, and embedded signatures in online tools such as SharePoint, Delta, or other engineering-approved document system. Authenticated electronic signatures are acceptable for engineering documents (versus wet-signing paper). *For drawings, the CAD Standards Manual, STD-342-300 may provide additional direction. [AP-341-402 r2]* *For LANL personnel, who have certificates inherent in their PIV (badge), use of authenticated signatures is expected. For subcontractors, there is a similar expectation for those doing ML-1, ML-2, and UCNI work because of its importance and since UCNI transmittal necessitates encryption (e.g., Entrust software) and thus such capability.*
Authentication	Approval of QA records by an authorized individual by providing signature (or initials) and date that indicate a record has been reviewed for technical accuracy and administrative requirements. Authentication confirms the completeness of a record. Various forms of authentication may be used, e.g., e-mail sent by an authenticated user, electronic or handwritten signature, or a completed and accepted form. [P1020-1, r14] *See also Project Record Document (PRD)*
Authority Having Jurisdiction (AHJ)	Term for technical authority in NFPA, explosives safety, and Uniform Plumbing and Mechanical documents, but sometimes applied more broadly to other code officials. This and similar terms are known generically as SMPOs at LANL (search SMPO). [ESM Ch. 1, Z10; Ch. 2, D40GEN; Ch. 6 D10-30] *Generally, NNSA is the default code official by Order or CFR and delegates some or all the authority to LANL by way of letter or other method. ESM Ch. 1 Z10 includes a table (Z10-2) with a snapshot of this.*
B	TOP
Backbone	A facility (e.g., pathway, cable, or conductors) between telecommunications rooms, the entrance facilities, and the equipment rooms within buildings. [ESM Ch. 19, D60]
Balance of Plant (BOP)	Those auxiliary or support systems that enable the primary process systems to operate. *E.g., the plutonium facility has an Essential Balance of Plant Group.*

Term	Definition
Baseline	1. In project management, a quantitative definition of cost, schedule and technical performance that serves as a base or standard for measurement and control during the performance of an effort; the established plan against which the status of resources and the effort of the overall program, field program(s), project(s), task(s), or subtask(s) are measured, assessed, and controlled. Once established, baselines are subject to change control discipline. [Directives definitions] 2. In another sense, a specification or product that has been formally reviewed and agreed upon, that thereafter serves as the basis for use and further development, and that can be changed only by using an approved change control process. [ESM Ch. 21, SOFT-GEN; Ch. 20] 3. In a support to operations, maintenance, or mod sense, a set of operating readings and/or parameters taken when a system or equipment is operating under known conditions (usually new or rebuilt) used for comparing future readings to troubleshoot or assess the system/equipment health. DOE G 433.1-1A Chg 1 (Admin Chg)
Basic Component	A structure, system, component, or part thereof that affects its safety function, that was designed and manufactured in accordance with the requirements of ASME NQA-1, or commercial grade items which have successfully completed the dedication process. [ASME NQA-1a-2009 Subpart 2.14, AP-341-607, AP-341-610, AP-341-610, AP-341-703]
Basis of Design	A controlled set of validated requirements that define the envelope of functional, performance, safety, and interface requirements with which a completed design must comply. This may also be called the Functional Specification. [ESM Ch. 20]
Beneficial Occupancy (or "Mechanical Completion" or "Use and Possession prior to Completion"	Terms used to describe the procedure when LANL occupies or makes use of any part of the work prior to Substantial Completion or Final Completion. *This does not refer to LANL Project Team members including inspectors but could include installers of LANL-furnished/installed equipment or building tenants. The presence of such personnel at the project site may cause disruption of the Subcontractor's activities and is discouraged; furthermore, such occupancy is subject to conditions set forth in the construction contract. LANL is not required to take such occupancy and may wait for Final Completion to use or occupy the site; however, if LANL decides to occupy any portion of the project space prior to Final Completion, LANL is required to issue a Certificate of Beneficial Occupancy. A Certificate of Beneficial Occupancy must not be issued without concurrence of the LBO if Beneficial Occupancy will occur prior to Substantial Completion*. [Adapted from UC Office of President Facility Managers Manual. "Use and Possession" is a FAR term. ADPMSS Proc 606 uses many of these terms. Mechanical and physical (full) completion are terms used in CM-Div CMP 300 rev 0. Concepts but not terms above are used in LANL subcontract documents (e.g., GC-29); ESM Ch. 16 IBC-GEN FM05; Ch. 15]

Term	Definition
Bill of Materials (BOM); Consolidated Bill of Materials (CBOM)	A listing to procure items based on item's make and model number, not an item's performance specifications. [AP-341-517; LMS 01 1117] *May be a form (e.g., in AP-341-517) or a table on a drawing. Bills of Materials are typically on drawings while a Consolidated Bill of Materials (CBOM) is a project's compilation of all BOMs.*
Bounding Set Points	These are set points to satisfy safety basis requirements, protect equipment/systems from operational damage, or other limiting values for the proper intended operation of the software. Changes to operational set points within the minimum or maximum values would not constitute a change, but rather would be considered operational use of the software. Example: Bounding set points may be minimum or maximum pressure or tank level values. [ESM Ch. 21, SOFT-GEN]
Brazing	A group of joining processes that produces coalescence of material by heating them to the brazing temperature in the presence of a filler metal having a liquidus above 840° F and below the solidus of the base metal. The filler metal is distributed between the fitted faying surfaces of the joint by capillary action. [ESM Ch. 13, Vol. 1, 1-99]
BUILDER™ Sustainment Management System	NNSA's authoritative data source for information related to condition and functionality assessments. [SD 430.1C]. *Engineering doesn't access the database normally, but it is used by NNSA for funding decisions and its scope affects CMMS/MEL scope decisions in ESM Ch. 1 Section 200.*
Building Automation System (BAS)	Building Automation System - A control system that provides temperature control to normally occupied portions of a facility. This may include, but is not limited to: HVAC equipment, power metering equipment, lighting controls, etc. It does not include Safety Significant (ML-2) or Safety Class (ML-1) control systems. [ESM Ch. 8 D3060.90]
Building Information Model or Modeling (BIM)	3D CAD software with interactive ("smart") objects that interface to a database of object attribute data. This is the key component of a virtual built environment (VBE). *AutoCAD Revit is the BIM standard software at LANL.*
Building Code Program	LANL's administrative and technical provisions and amendments to the IBC and related codes and standards. [ESM Chapter 16] *Related definitions not in this glossary may be Ch. 16 IBC-GEN or its referenced documents, including adopted/amended model codes such as the IBC, IEBC, NEC, UMC, and UPC.*
Building core	A three-dimensional space, permeating one or more floors, and is used for the extension and distribution of utility services (e.g., elevators, washrooms, stairwells, mechanical and electrical systems, and telecommunications) throughout the building. [ESM Ch. 19, D60]
Building Official	See LANL Building Official (LBO)

Term	Definition
Building Services	Plumbing, heating, electrical, ventilating, air conditioning, refrigerating, controls, fire alarm and suppression, elevators, boilers, pressure vessels, telecom/data, building security systems, and other mechanical and electrical systems or components required to make a facility fully functional for the required occupancy. [ESM Ch. 16 IBC-GEN]
C	TOP
CAD Standards Manual (CSM or LCSM)	LANL's criteria for drawings (computer aided design) and sketch guidance, webposted as STD-342-300. *BIM direction beyond that in ESM Ch. 1 Z10 is being developed.*
Calculation	Formal procedure of calculating (i.e., determining something by mathematical or logical methods) and/or problem-solving that involves numbers or quantities. Analysis to support design and operability of SSCs, technical baseline, or the facility safety basis. [AP-341-605]
Calculators (www)	Informal, online calculators such as the Wolfram|Alpha Computational Knowledge Engine hosted by the LANL Research Library. *Caution: Usage for nuclear or other safety design or analysis requires appropriate verification (e.g., ESM Ch. 21, SOFT-GEN r1). For all other use, SOFT-GEN excludes as follows:* "Uncomplicated software tools, including productivity aids that are adequately controlled through the design process. *Examples include unit conversion software, spike programs, equipment selection software, diagnostic software, and interpolation calculators."*
Certificate of Occupancy (CoO)	Process/Form for LANL Building Official acceptance of highest risk category of projects. [ESM Ch. 16 IBC-GEN; Form 5]. *A detailed pre-CoO checklist is posted with it.*
Certification Document	A document, regardless of title, signed or otherwise authenticated by an authorized representative of the certifying entity, certifying that a particular batch, lot, item, or service was manufactured/performed in accordance with and/or meets specific requirements contained in applicable codes, standards, specifications, or other published requirements. Examples include Certificate of Test and Certificate of Compliance (CoC). [aligns with IQPA-IQ-FD-105.001 draft Exh. H – Part 1 (associated with P841-1)]. [LMS 01 4216r3] *Certification documents should be based on applicable codes or standards whenever possible (some have specific content requirements). For nuclear applications see NQA-1 Certificate of Conformance (C of C)*

Term	Definition
Certified Material (or Mill) Test Report (CMTR)	Report detailing physical and chemical properties of the material(s) for which they are required, and in accordance with the applicable national or international material standards (e.g., ASTM, ANSI) for the material type. CMTRs (material or mill) must be the results of test performed by the material manufacturer or by a material verification process, if such a process is allowed by the standard governing the material type and must specify the test method and the source of the acceptance criteria. Each CMTR must be signed by an authorized representative of the testing entity, be traceable to the materials delivered via heat, lot, or other identification, and must meet any content requirements of the applicable national or international standards invoked for the material type. [adapted from P841-1, IQPA-IQ-FD-105 QD-05]. *Usage guidance: When CMTRs are requested through Exhibit H – Part 1 for Standard Procurements (or otherwise), requestor should indicate the material(s) for which they are required and the consensus standard(s) to be met or provide references to Statement of Work (SOW) or specification section(s) where information is provided. If/when spelling out term, choose "Material" or "Mill" coinciding with referenced standard usage; however, either should yield desired result. CMTRs are evidence (data), and generally superior to CoC-type certification documents that are merely attestations.* [LMS 01 4216r3; ESM Ch. 13, Vol. 1, 1-99]
Certificate of Analysis (C of A)	A certified report for gases or other chemicals, detailing chemical properties of the material(s) for which they are required, and in accordance with the applicable consensus standards (e.g., ISO 6141, 8573.1; ANSI/CGA stds). [adapted from P841-1, IQPA-IQ-FD-105 QD-18] *Gas purity refers to the percentage of a single gas in a mixture, while quality encompasses factors like contamination levels, delivery, and consistency. See also and adapt usage notes for CMTR.*
Change of Occupancy	Any of the following shall be considered as a change of occupancy where the [currently adopted] IBC requires a greater degree of safety, accessibility, structural strength, fire protection, means of egress, ventilation or sanitation than is existing in the current building or structure: 1. Any change in the occupancy classification of a building or structure. 2. Any change in the purpose of, or a change in the level of activity within, a building or structure. 3. A change of use. [IEBC-2021, ESM Ch. 16 IBC-GEN PPD form FM01] *Must follow IEBC Ch. 10 (as well as other chapters when also an alteration).*
Chicago Manual of Style, The (CMOS)	Lab standard for grammar and punctuation (except for news stories). [CEA website]
Chief Inspectors (LBO)	Selected individuals delegated by LBO to oversee inspection function day-to-day as reflected on the Building Code program website (e.g., organization chart). [ESM Ch. 16 IBC-GEN]

Term	Definition
Child Documents	Some engineering documents (primarily design revision documents) have a child relationship to a parent document. They are given names with sequential numbers that are paired with their parent documents. *Examples of child documents are Field Change Requests (FCRs), Design Revision Notices (DRNs), and Design Information Transmittals (DITs).* [AP-341-402]
Class I Changes	Those technical changes requiring customer or ALDICP Change Control Board (CCB) approval per AP-350-161, such as those: changing a government approved document containing technical requirements, designs, or constraints, changing contract or stakeholder level technical requirements, and/or causing threshold cost or schedule impacts, as defined in AP-350-161. [concept from MIL-HNBK-61] [ESM Ch. 20]
Class II Changes	Any changes to previously baselined requirements (imposed or derived) and design documents that are not Class I changes. [ESM Ch. 20]
Code	National or international consensus document amended and adopted as an ordinance relating to building construction and occupancy, and administered for the protection of health, safety, and welfare. [ESM Ch. 13, Vol. 1, 1-99] *LANL does this through the Engineering Standards primarily, not ordinance.*
Code of Federal Regulations (CFR)	The official legal print publication containing the codification of the general and permanent rules published in the *Federal Register* by the departments and agencies of the Federal Government. *LANL follows DOE-related (Title 10) and others.*
Code of Record (COR)	A set of design and operational requirements, including Federal and state laws, in effect at the time a facility or item of equipment is designed and accepted by DOE. The COR is (i) initiated during the conceptual design phase, placed under configuration control to ensure it is updated to include more detailed design requirements as they are developed during preliminary design, (ii) controlled during final design and construction with a process for reviewing and evaluating new and revised requirements to determine their impact on project safety, cost, and schedule before a decision is taken to revise the COR, and (iii) maintained and controlled through facility decommissioning. The COR may be defined in contracts, Standards, or Requirements Identification Documents (or their equivalent), or project-specific documents. [DOE-STD-1189-2016; for fire, DOE O 420.1C, Chg 3, Att. 2 Ch. II, 3.a.(2)(a)]. *See ESM Ch. 1, Z10 article on this topic for LANL usage.*

Term	Definition
Cognizant System Engineer (CSE)	Involved in the planning and execution of maintenance activities affecting their assigned systems. Must have knowledge of the assigned system's safety design basis and operating limits from safety analysis. Lead responsibility for configuration management of design. Each Vital Safety System (VSS) is assigned a qualified CSE, some may require an assignment of more than one based on a graded approach. A single CSE may be assigned to multiple systems. Applies to Safety Class and Safety Significant systems (active and passive) as defined in the facility's NNSA-approved safety basis, as well as to a subset of Other Hazard Controls (OHC) systems. [P341] *CSEs have been determined to be "Technical Staff" positions as per DOE Order 426.2, having increased training and qualification versus a Plant System Engineer. [CSE-QS-004-R3] See also list on CoE Resources webpage as CSE Assignment/ Qualification Listing.*
Commercial Grade Item (CGI)	A structure, system, or component (SSC) or part thereof that affects its safety function that was not designed and manufactured in accordance with the requirements of ASME NQA-1. [AP-341-607, AP-341-610, AP-341-703] *See also Dedication.*
Commercial Grade Service (CGS)	A service that was not provided in accordance with the requirements of ASME NQA-1 that affects the safety function of a basic component. (ASME NQA-1a-2009 Subpart 2.14) [AP-341-703]
Commercially Controlled Software	As determined using Form 2033, software that is not determined (graded) to be safety or risk significant software, and does not meet the criteria of Less Than Commercially Controlled software, is graded as commercially controlled software. [P1040r13; ESM Ch. 21, SOFT-GEN]
Commingling	The ability of an individual in or from a radiologically controlled area and an individual in an uncontrolled area to come in contact with each other. [ESM Ch. 11]
Commissioning (Cx)	1. Commissioning is a collaborative, quality-driven, systematic process that focuses on verifying and documenting that a building and all its commissioned systems are planned, installed, inspected, tested, operated, and managed as designed. [ESM Ch. 15] 2. A systematic process of assuring, by verification and documentation, from the pre-design phase to a minimum of one year after construction, that all facility systems perform interactively in accordance with the design documentation and intent, and in accordance with LANL's operational needs [ESM Ch. 1, Z10].
Commissioning Agent (CxA)	A qualified and experienced Cx process person, company, or agency assigned to a specific project, working under the guidance of the LANL Commissioning Authority and the LANL Project Manager. The CxA leads, plans, coordinates, and implements the overall project specific Cx process activities. Qualification is per the judgment of the LCA but shall be at least a Level II per Appendix A. Must be independent of all non-LANL construction subcontractors. [ESM Ch. 15]

Term	Definition
Commissioning Final Report	The documentation package that records the Cx plan, test procedures and results of the commissioning process, including the recorded performance of the various systems and components. The final report is issued to the facility owner for final acceptance of the facility. [ESM Ch. 15]
Commissioning Plan (Cx Plan)	The plan that defines the Cx process, including schedules, responsibilities, document requirements and Cx test requirements which are developed in increasing detail as the project progresses through its various phases. [ESM Ch. 15]
Commissioning Test Procedure	Written, detailed, step-by-step protocol that defines the means and methods, personnel, and expectations for conducting tests on components, equipment, assemblies, systems, and system interfaces. The procedure has provisions for verifying all relevant data, recording the results, and identifying the requirements and responsibility for each test. [ESM Ch. 15]
Competent	Individuals or groups who have the necessary ability, knowledge, and/or skill to complete a task successfully. [NQA-1; AP-341-605]
Component	Part or assembly of parts within a structure, system, or piece of equipment. ESM Ch. 1, 200. [AP-341-502] *These can/should be handled as spawned from Equipment in the CMMS/MEL.*
Component Configuration Datasheet (CCD)	The document used for documenting both the component nameplate data and the independent verification. The CCD is also the mechanism for identifying missing nameplates or for transferring acquired data into the SSC technical baseline documents. [AP-341-510]
Component Testing (Pre-functional testing)	The individual pieces of equipment are confirmed to be capable of performing in accordance with the specifications, drawings, and manufacturer's requirements. This is documented in a component test data sheet provided by and completed by the Commissioning Agent. The information recorded on the data sheet provides baseline data for future re-evaluation of the components or systems. [ESM Ch. 15]
Computerized Maintenance Management System (CMMS)	Computerized maintenance management system that includes the Master Equipment List (MEL) and facilitates work, history-keeping, and other functions. LANL's CMMS includes the primary application of Asset Suite EAM v9 [AS9] from Hitachi ABB Power Grids and also ABB's eSOMS (many life safety inspections) which in total capture the MEL. [ESM Ch. 1, 200] *MSS has older CMMS Desk Guides and newer AS9 ones here.*
Computer Program	A combination of computer instructions and data definitions that enables computer hardware to perform computational or control functions. [NQA-1-2008/1a-2009; ESM Ch. 21, SOFT-GEN]
Computer Program Listings	A printout [e.g., pdf] or other human readable display of the source and, sometimes, object statements that make up a computer program. [ESM Ch. 21, SOFT-GEN]

Term	Definition
Conceptual Design Baseline (CDB)	The CDB is composed of requirements and design documents that define the final product to be delivered by a project. The associated requirements documents, including the RCD and FRD, specify the final product and its associated processes and constraints. The associated design documents identify the system and facilities that comprise the project. They also identify the plot layout. The CDB is developed during a project Conceptual Design phase. Refer to the Table SE-RM-1 for identification of contents. [ESM Ch. 20]
Conceptual Design Phase	1. Project design phase that culminates in the development of the design basis for the preferred design concept to proceed into preliminary design. (Paraphrased from DOE-STD-1189). *The end of conceptual design is marked by CD-1 approval for large projects and is approximately equivalent to 30% design completion for smaller projects*. [AP-341-620] 2. The phase of system/facility acquisition that develops a conceptual design package that fully specifies the final product to be developed and provides concept-level designs for facility and process. During this phase, the number and type of facilities and systems are identified for further development, with preliminary requirements being developed for each. (Begins when Critical Decision 0 [CD-0] is received, ref. DOE O 413.3). [ESM Ch. 20]
Conduct of Engineering (CoE)	Formality of operations program focused on appropriate engineering conduct (e.g., function, activities, standardization, rigor) a corollary to conduct of operations, maintenance, and training programs. [adapted from INPO usage]
Conduct of Engineering Office (CENG)	The CoE Office, officially CENG-OFF in organizational listing. In the context of approvals this refers to the CENG Office Director. [ESM Ch. 1, Z10]
Configuration Item	A collection of hardware or software elements treated as a unit for the purpose of configuration control. [ESM Ch. 21, SOFT-GEN]
Configuration Management (CM)	1. In general, a disciplined process that involves both management and technical direction to establish and document the design requirements and the physical configuration of the facility or activity and to ensure that they remain consistent with each other and the documentation. [DOE-STD-1073; PD340 r8]. 2. In software quality, the process of identifying and defining the configuration items in a system (i.e., software and hardware), controlling the release and change of these items throughout the system's life cycle, and recording and reporting the status of configuration items and change requests. [ESM Ch. 21, SOFT-GEN]
Confirmatory Testing	Confirmatory testing consists of laboratory or field measurements conducted in accordance with P330-8, *Inspection and Test* that investigate the properties of interest (e.g., physical, chemical, geologic, mechanical, electrical, etc.) [AP-341-513]

Term	Definition
Constraints	Defining factors and requirements that limit the design flexibility. Constraints are normally provided in the form of laws, regulatory standards, national consensus codes, and LANL Engineering Standards. [AP-341-602]
Construction Specifications Institute (CSI)	A national not-for-profit association of more than 6,000 members dedicated to improving the communication of construction information throughout continuous development and transformation of standards and formats, education, and certification of professionals to improve project delivery processes. [CSI] CSI specification format means the division/section numbering per MasterFormat (defined here and linked here), the 3-part/heading outline defined by SectionFormat, and generally the formatting guidance in PageFormat. [ESM Ch. 1, Z10 Att. F]
Constructor	Term for the entity performing fabrication or physical construction activity. *Usage: Used primarily in the Engineering Standards but not preferred term in contract pro forma. When not LANL self-performed, this is the Subcontractor*. [ESM Ch. 1, Z10; LMS 01 4216]
Contractor	Any entity under contract with the Department of Energy (DOE)/National Nuclear Security Administration (NNSA) with the responsibility to perform activities at a DOE/NNSA site or facility. At LANL, this is Triad, the prime contractor to NNSA. *ASM procurement pro forma (sometimes "proforma," aka boilerplate exhibits) using ALL CAPS); this may be a Triad employee or someone in Triad employ — as opposed to a constructor or vendor engaged by LANL, and thus a subcontractor to NNSA (i.e., SUBCONTRACTOR).* *In very old Standards documents, Contractor may still be in use as the entity performing the work which may be design, offsite fabrication, onsite construction, and/or maintenance; correct to Subcontractor. When the intention is that task is performed by Triad, then the term LANL is preferred over Triad or Contractor in design outputs since timeless and clear. [ESM Ch. 1, Z10]* If uncorrected or unclear in issued design, seek clarification by RFI.
Contractor Readiness Review	In the readiness processes of PD115, upon completion of the MSA, the Contractor RR, either a Contractor Operational Readiness Review (CORR) or a Contractor Readiness Assessment (CRA), is performed.
Contractor Requirements Document (CRD)	An attachment to a directive that states the parts of the directive that apply to contractors. Where required, a CRD is included as [an attachment] to a directive. CRDs can be unilaterally inserted into contracts that include DEAR 970.5204-2, *Laws, regulations, and DOE Directives*, in accordance with that clause. The clause requires the Government to give the contractor time to identify the effect on the contract, including any increased costs or need for revision to the contract's incentives. For contracts not subject to DEAR 970.5204-2, the CRD may be bilaterally (that is, with the contractor's agreement) incorporated into the contract. [DOE O 251.1D AdmChg1]

Term	Definition
Control point	A point in the software life cycle at which specified agreements or control (typically a test or review) are applied to the software configuration items being developed, e.g., an approved baseline or release of a specified document or computer program. [ESM Ch. 21, SOFT-GEN]
Corroborating Data	Corroborating data are existing data or newly developed data that are used to support or substantiate other existing data. [AP-341-513]
Critical Characteristics	An item's identifiable and measurable attributes that are necessary for the item to perform its intended safety function. Includes item's part number, identification markings, physical characteristics, and performance characteristics. Important design, material, and performance characteristics of a commercial grade item that, once verified, will provide reasonable assurance that the item will perform its intended safety function. [NQA-1, AP-341-607, AP-341-610, AP-341-703]
Critical Decision (CD)	A DOE approval for a line-item project to proceed to next phase. 0. CD-0 is Approve Mission Need [conceptual design can then begin; that represents about 30% of the overall design effort]. 1. CD-1 is Approve Alternative Selection and Cost Range. [Thus, preliminary design can begin; this results in 60% maturity]. 2. CD-2 is Approve Performance Baseline (definitive scope, schedule and cost baselines have been developed, and the project is ready for implementation. [This authorizes Detailed Design, which progresses design to a 90% complete level] 3. CD-3 is Approve Start of Execution [e.g., construction], [Design is 90% complete] 4. CD-4 is Approve Start of Operations or Project Completion. [Design is 100% complete] [DOE O 413.3; ESM Ch. 1, Z10]
Critical software	Software whose proper performance is critical to the expected performance of a safety SSC, a defense-in-depth SSC, or the safety of the nuclear facility. [ESM Ch. 21, SOFT-GEN]
Cross-connect	In telecommunications, enables the mechanical termination and interconnection of premise cabling and backbone cabling. In piping, the ability for two systems or fluids to intermingle (undesirable in some cases). [ESM Ch. 19; Ch. 6 D60]
D	TOP
Data Qualification	Data qualification is a formal process to provide a desired level of confidence that data are suitable for their intended use. [AP-341-513]
Decomposition	The process of refining a requirement in further detail using analysis. [ESM Ch. 20]

Term	Definition
Dedicating Entity	The organization that performs the dedication process. Dedication may be performed by the manufacturer of the item, a third-party dedicating entity, or by the facility (LANL). [ASME NQA-1a-2009 Subpart 2.14; AP-341-703]
Dedication	An acceptance process performed in accordance with ASME NQA-1 to provide reasonable assurance that a commercial grade item or service will perform its intended safety function and, in this respect, is deemed equivalent to an item or service designed and manufactured or provided under the requirements of ASME NQA-1. This assurance is achieved by identifying the critical characteristics of the item and verifying their acceptability by inspections, tests, or analyses performed by the purchaser or third-party dedicating entity after delivery, supplemented as necessary by one or more of the following: commercial grade surveys, product inspections or witness hold-points at the manufacturer's facility, and analysis of historical records for acceptable performance. In all cases, the dedication process must be conducted in accordance with the applicable provisions of Part I of ASME NQA-1. [ASME NQA-1a-2009 Subpart 2.14; AP-341-703]. *More commonly referred to as Commercial Grade Dedication/CGD. See* Guidance on Technical Evaluations and Item Dedication *in the* Engineering Learning Guide *collection.*
Defense-in-Depth (DID) or Other Hazard Controls (OHC)	Preventive or mitigative controls that do not rise to the level of SC or SS but still enhance the safety of the facility. These controls are identified in the hazard evaluation table, but not explicitly credited with a SC/SS designation as identified in the DSA. Such controls are maintained in accordance with safety management programs. Other hazard controls are expected to be designed to the applicable industry code/standard for the given type of non-safety SSC. [DOE-STD-3009-2014; AP-341-502]. *See graphic that follows the "Z" definitions.*
Defense Nuclear Facilities Safety Board (DNFSB)	An independent organization within the executive branch chartered with the responsibility of providing recommendations and advice to the President and the Secretary of Energy regarding public health and safety issues at DOE (Department) defense nuclear facilities. In operation since in October 1989, the Board reviews and evaluates the content and implementation of health and safety standards, as well as other requirements, relating to the design, construction, operation, and decommissioning of the Department's defense nuclear facilities. [DOE's very comprehensive website] *DNFSB site.*
Deferred Design	Design performed post-permit [IBC-2021 107.3.4.1 and 202; ESM Ch. 16 IBC-GEN]. *Often, deferred design is the DPIRC waiting until procurement to perform design such as anchorage of chosen model or support of field-routed piping. The LBO normally permits construction start with a package that lacks final design for specialties such as structural detailing, HVAC, fire alarm and suppression, and equipment anchorage (i.e., this detail submission is deferred, and often delegated to the constructor as well). Limited portions of the design may proceed this way.*
Degraded Condition	A condition of an SSC, potentially affecting operability, in which quality or functional capability has been reduced by mechanisms such as aging, erosion, corrosion, or improper operation or maintenance. (P330-6) [AP-341-514]

Term	Definition
Delegated Design	Design performed by a design agency other than the DPIRC, one serving either the DPIRC (normally during design phase, by a partnering firm or consultant) or the constructor (thus also Deferred, defined above).
Delta aka ẟelta	Online software for developing and approving DCFs per AP-34-517 and FCRs, DRNs, and FCNs per AP-341-519 *Design Revision Control.*
Demolition; also D&D	Tearing down a system, structure, or portion of same. [ESM Ch. 16 IBC-GEN; PPD form FM01; LMS Div 02]. D&D is deactivation/decommissioning (sometimes preceded by characterization and/or decontamination), followed by demolition/dismantling, then disposal and/or salvage. [AP-WORK-001 Att. 1] *See ESM Ch. 16 IBC-GEN heading for this.*
Demolition Instructions	Part of the Design Change Form (AP-341-517-FM01). High-level engineering inputs necessary for modification implementation. Provides the minimum necessary guidance for controlling unusual activities or activities that directly affect demolition of modification or operation of equipment. [AP-341-517]
Department of Energy Acquisition Regulation (DEAR)	Standardized procurement clauses for DOE/NNSA contracting. NNSA-Triad contract includes some verbatim, others with modification (and the Federal Acquisition Regulations/FARs similarly). DEAR authority is from 42 U.S.C. 7101 and 50 U.S.C. 2401. U.S.C. here.
Deputy Building Officials	Persons delegated total or partial authority to act for the LBO. *The LANL Fire Marshal is delegated as Deputy acting for fire and life-safety related matters. See ES-DO LBO organization chart.* [ESM Ch. 16 IBC-GEN and Att. A (LBC) 103.3]
Derived Requirement	A lower-level function or performance metric that is deduced or inferred to fill in detail, gaps, or to subdivide an upper-level requirement amongst multiple SSCs. Derived requirements are generally determined through functional analysis, trade studies, or calculations. These can be changed by a project through additional analysis. [ESM Ch. 20]
Design Agency	The LANL organization or subcontractor (A/E) responsible for the preparation of engineering design and documentation [P342]. *See also Designer, DPIRC, and EOR.* [ESM Ch. 1, Z10; Ch. 2 D40GEN, ESM Ch. 8 D3060.90]
Design Analyses	Calculations and/or experiments associated with design. [ESM Ch. 21, SOFT-GEN]

Term	Definition
Design Authority (DA)	1. The organization having the responsibility and authority for approving the design bases, the configuration, and changes thereto. [NQA-1] 2. The person or group responsible for the final acceptability of and changes to the design of a system or component and its technical baseline. [based on DOE-STD-1073] *A DAR is a DA Representative.* *For facilities, DA is not a group or organization but individuals, typically the Division Leads of Engineering Services and Plutonium Facilities Engineering. See Facility Design Authority Representative for related information.* (See PD340) [ESM Ch. 2 D40GEN; Ch. 12] *Elsewhere, this term is also used for programmatic operations/facilities such as DARHT and Packaging & Transportation, and for the DAs over weapons designed by LANL.*
Design Basis	1. The set of requirements that bound the design of systems, structures, and components within the facility. Those design requirements include consideration of safety, plant availability, efficiency, reliability, and maintainability. [DOE G 413.3-12 Chg 1 (Admin Chg)] 2. Information which identifies the specific functions to be performed by an SSC of a facility and the specific values or ranges of values chosen for controlling parameters as reference bounds for design. These values may be restraints derived from generally accepted 'state-of-the-art' practices for achieving functional goals or requirements derived from analysis (based on calculations and/or experiments) of the effects of a postulated accident for which an SSC must meet its functional goals. Consists of the Design Inputs, the Design Analysis and Calculations, and the Design Outputs. Explains why a design requirement has been specified in a particular manner or as a particular value. [DOE-STD-1073-2016; ~DOE G 420.1-1A; AP-341-405, AP-341-605]
Design Change	Any revision or alteration of the technical requirements defined by approved and issued design output documents and approved and issued changes thereto [NQA-1; AP-341-517; 620] *Refers to SSC configuration management, not design revision control per AP-341-519.*
Design Change Form (DCF)	A form/traveler which identifies engineering workflows and documents key activities associated with making permanent physical modifications to the Los Alamos National Laboratory (LANL) site configuration. [AP-341-517]
Design Criteria	Those design or technical requirements that define the item's form, fit, capabilities, applicable codes and standards, operational limits, and functional requirements defined in the item's design output documents. [AP-341-703]
Design Documents	Design documents define either the design requirements or the design basis of the facility or activity. Design documents include design specifications, design change packages, design drawings, design analysis, setpoint calculations, summary design documents, correspondence with DOE or other regulator that provides design commitments, and other documents that define the facility or activity design. [DOE-STD-1066-2016; ESM Ch. 8 D3060.90]

Term	Definition
Design Input	1. Information such as contractual requirements, customer expectations, functions and performance requirements, requirements derived from hazard analysis, requirements derived from prototype testing, safety requirements, security requirements, interface requirements, operating environment, health and safety considerations, design life, codes and standards requirements, and reliability requirements. 2. Requirements and criteria required to permit the design to be carried out in a correct manner and to provide a consistent basis for making design decisions, accomplishing design verification, and evaluating design changes. *Examples: Permits and Requirements Identification (PRID), Mission Needs Statement, Project Functions and Requirements document (FRD), Requirements and Criteria Document (RCD), Preliminary Project Determination (PPD), alternative studies, Conceptual Design Reports (CDRs), LANL Reviewing Organizations Form AP-341-620-FM02, Scope of Work (SOW), preliminary safety analysis documents, preliminary fire hazard evaluations, environmental reports, etc.* [P341, AP-341-517, AP-341-620]
Design Manager (DM)	A role to coordinate internal design work, provide project coordination support, ESR management, primary POC for design modifications to facility and programmatic groups. *As an optional, business role, DM is not addressed in CoE APs but may be in local documents like desk or work instructions.*
Design Inputs	Those specific criteria, limits, performance requirements, bases, or other initial requirements (i.e., specific operational requirements, design bases, and commitments), as well as general restrictions and limits to the engineering design process that ensure consistency and quality of design (i.e., quality assurance or QA requirements, applicable codes and standards, regulatory requirements, and required design methodologies) upon which the detailed final design is based. [DOE-STD-1073-2016]
Design Input Specification	A design document prepared for safety related systems, with emphasis on conditions unique to the facility and subject process. [ESM Ch. 8 D3060.90]

Term	Definition
Design Output	1. Design outputs include documentation such as drawings, design change packages, specifications, load lists, valve lists, design reports, and setpoint lists. They are the composite result of the engineering organization's consideration of the design inputs and the design analysis and calculations. The design outputs specify the requirements of the design basis, e.g., the necessary functions, capabilities, capacities, physical sizes and dimensions, limits and setpoints. They include the operational requirements, as well as procurement requirements, QA requirements, construction/installation specifications and instructions, post-installation testing, post-maintenance testing, and periodic surveillance/testing requirements. [DOE-STD-1073-2016] 2. Product of the design process that specifies the requirements of SSCs and dictate their physical configuration. Documents specify which requirements are essential to support the design bases. Procurement specifications establish suitability of procured items by invoking design codes and standards; specifying functional requirements; and identifying test, inspection, and certification requirements. Examples: Calculations, Drawings/Sketches, Specifications, Bills of Material (BOM), Demolition and Installation Instructions, Post Modification Test Forms, Electrical Investigation Worksheets, Quality Inspection Plans, Management level Determination (MLD) Forms, Master Equipment List (MEL) revisions, Facility Design Description (FDD), System Design Description (SDD), Hazard Analysis/Safety Analysis documents, Vendor Information, Engineering Studies, Technical Reports, etc. [P341, AP-341-517, AP-341-620]
Design Process	Translates design inputs into design output documents using design analysis and calculations. Analysis requires sufficient detail in the purpose, method, assumptions, design input, references, and units so that a person technically qualified in the subject can review and understand it and verify the adequacy of the results without recourse to the originator. [P341]
Design Professional in Responsible Charge (DPIRC)	For external AEs, the lead engineer or architect in the Design Agency with overall responsibility for the correctness and coordination of all agents, that interfaces with LANL, and sealing (stamping) as required and delivering the design (and thus a registered DPIRC, sometimes "RDPIRC"; if an engineer, a P.E.). For internal design, the lead discipline engineer. *Term is used by IBC (e.g., 107.3.4) and ESM Chapter 16, Ch. 1, Z10. DPRIC is designated to LBO by IBC-GEN Form 3.*
Design Requirement	Those engineering requirements reflected in design output documents that define the functions, capabilities, physical sizes and dimensions, limits and set points, etc. specified by design engineering for a structure, system, and component (SSC). The design requirements provide the results of the design process. The objective of the design control element of configuration management is to document and maintain the design requirements for configuration management SSCs and credited controls to ensure that they are consistent with the as-built facility or activity. (From DOE-STD-1073-2016) [AP-341-405, AP-341-703]

Term	Definition
Design Review	A critical review to provide assurance that the final design is correct and satisfactory (ASME NQA-1). [AP-341-620]
Design Revision Notice (DRN)	Form/process used to process complex changes that introduce new design requirements which initiate new functions or requirements that exceed those defined in the project definition documents (Functions and Requirements Document, Requirements and Criteria Document, etc.). DRNs are also used to process changes that require substantial reanalysis or new analysis. When new design functions and requirements are added to the project, the Responsible Engineer shall update affected project definition and scoping documents. [AP-341-519]
Design Verification (DV)	Process of confirming or substantiating design by one or more methods to provide assurance that the design meets the specified design inputs. A formal documented process performed by competent individuals to ensure that design outputs meet specified input criteria or requirements. Design Verification may be accomplished using any combination of Design Reviews, Alternate Calculations, and Qualification Tests. Verifier cannot perform this on their own work. [NQA-1, SD330, DOE-STD-1073/1189, P341, AP-341-605, AP-341-620]. *Performed by competent individual(s) or group(s) other than those who performed the original design but who may be from the same organization.*
Designed (or Developed) Software	Software that is designed or developed for a specific (custom) application. It may be developed by DOE or one of its Management and Operator contractors or contracted with a software company through the procurement process. [ESM Ch. 21, SOFT-GEN]
Designed Non-SSC software	Non-SSC software where the computer program can be changed other than through replacement. Replacement includes replacement with a subsequent software version or upgrade. [ESM Ch. 21, SOFT-GEN]
Designed SSC software	SSC software where the computer program can be changed other than through replacement of the computer program and/or the associated SSC. [ESM Ch. 21, SOFT-GEN]
Designer	Anyone working in a design agency capacity, whether engineer, architect, drafter, or designer. See also Design Agency, DPIRC, and EOR. [ESM Ch. 1, Z10]
Desktop Instruction (DI)	1. Information suitable for use at or on a desk or computer (such as a background area of a computer screen or monitor) that guides or aids a worker to perform specific tasks. [LANL Definition re PD311] 2. A Local Document that applies to specific organizations within a directorate, program, facility, or type of work/workers, and do not apply to the institution. [PD311 Requirements System and Hierarchy]. *ES DIs and forms are here. See also Work Instruction.*

Term	Definition
Directives	Documents in which DOE sets, communicates, and institutionalizes policies, requirements, responsibilities and procedures for Departmental elements and contractors. Directives include Policies, Orders, Notices, Manuals, and Guides. Manuals are currently being phased out. [DOE O 251.1D AdmChg1]. *Applicable DOE and NNSA directives are listed and hyperlinked in the LANL Prime contract.*
Document	At the Laboratory, a document includes information, regardless of medium or characteristics, received or created in the course of business, including but not limited to procedures, work instructions, specifications, drawings, plans, forms, and change documents. Informal and preliminary working notes are generally not document, unless specifically designated by program, QAP, or other requirements. Documents (NQA-1 definition)—Any written, pictorial, or electronic information describing, defining, specifying, reporting, or certifying activities, requirements, procedures, or results. A document is not considered to be a QA record until it satisfies the definition of a QA record (as defined by NQA-1, *Quality Assurance Requirements for Nuclear Facility Applications*). [P1020-2 r7]
Document Name	Document's unique identifier. Also, can refer to the concatenation of acronyms and numbers that make up the document's unique identifier. Can be equivalent to 'document number'. [AP-341-402]
Document Number	Document's unique identifier. Also, can refer to the concatenation of acronyms and numbers that make up the document's unique identifier. Can be equivalent to 'document name.' [AP-341-402]
DOE Enterprise	The entirety of DOE/NNSA facilities and functions including Headquarters plus Offices, Labs, and sites. *Phonebook for many personnel here or via Powerpedia here.*
E	TOP
Electrical Investigation Worksheet	Part of the Design Change Form. For modifications involving Electrical Distribution System (EDS) panels and circuits. Identifies EDS panels and circuits and other safety systems affected by the modification. Assists in defining lockout/tag out requirements. [AP-341-517]
Electrical Temporary Modifications	Temporary cables, jumper wires, lifted leads, pulled fuses, open terminal blocks, disabled annunciators, and temporary set point changes not part of routine maintenance, testing, or operating procedures. [AP-341-504]
Electric Power Research Institute (EPRI)	EPRI conducts R&D relating to the generation, delivery, and use of electricity (with a strong nuclear focus). *Membership is very costly, and LANL/DOE lacks such, but some (mostly older) documents have been publicly released; CoE has a partial collection.*

Term	Definition
Electronic Document and Records Management System (EDRMS)	A system that provides document control and records management services to organizations throughout the Laboratory. The EDRMS is used to access work control documents, such as procedures, drawings, and specifications, enabling workers to obtain the most recently approved version of a document needed to perform work. [P1020-1, r14] *LANL homepage link is under Top Tools. Supports PDF previews, advanced searching, to locate and view records. The Centralized Repository is the most used by engineering. Guides and help may be available from UTrain course 38870 and es-edrms@lanl.gov Access to some cabinets is controlled by request; contact above or EDRMS support helpdesk at 667-3367 or AskIT. Runs on Documentum D2 software.*
Energy Facility Contractors Group (EFCOG)	Collaborative group of DOE contractors. *Of CoE interest, includes (1) Engineering Practices Subgroup (under Ops WG; includes Fire Protection and Pressure Safety Communities of Practice; LANL participates) and (2) Procurement Engineering CoP under Safety WG's QA Subgroup. Groups sometimes produce meeting minutes, "Best Practices," or other documents that get posted.*
Engineer of record (EOR)	Often the same as DPIRC but term may also be used for the designer for a portion of the whole (e.g., structural). [ESM Ch. 1, Z10, IBC-GEN]
Engineered (or Engineering) Controls	Controls that eliminate or reduce exposure to a hazard through the use or substitution of engineered machinery or equipment. Examples include self-capping syringe needles, ventilation systems such as a fume hood, sound-dampening materials to reduce noise levels, safety interlocks, radiation shielding, process set points, and operating limits. [DOE G 450.4-1C, Integrated Safety Management System Guide; ESM Ch. 21, SOFT-GEN]
Engineered Safety Feature (ESF)	SSCs that prevent and/or mitigate the consequences of potential accidents described in the Documented Safety Analysis (DSA). [DOE O 426.2A] *At LANL, these would be part of a Vital Safety System; see that definition and graphic that follows the "Z" definitions.*
Engineering Service Request (ESR)	Online request/tracking program. *Submit Request. Agent Login. Project Engineer ESR User Guide (pdf)*
Engineering	The application of science and mathematics by which the properties of matter and the sources of energy are made and maintained useful to humans in structures, systems, components, and processes…in an efficient, safe, and secure manner through (1) the appropriate application of regulations, industry codes and standards, DOE Orders and standards, and (2) the education, skills, training, and judgment of engineering professionals. [CoE circa 2010] *Note: The "practice of engineering," however, which triggers the need for the sealing (PE stamping) of design by an external-to-LANL engineer, is based in adopted New Mexico law and defined by ESM Ch. 1 Z10.*
Engineering LibGuide	LANL Research Library compendium webpage of resources of interest to engineers. *Has both discipline-specific and resource-centric (e.g., ebooks, databases of documents) webparts to help locate needed information. Note, for a specific document, a Library Catalog search on their homepage may yield results more comprehensively.*

Term	Definition
Engineering Manager (EM)	A supervisor of staff providing engineering in the line organization (per an organization chart). See also Facility Engineering Manager.
Engineering Request for Information (ERFI)	Form that may be used when design information is being requested either from within the design team or from external interfaces. The ERFI may be used during any phase of the project. The ERFI is not a design revision document (see AP-341-519 *Design Revision Control*) but may be used as a vehicle to clarify design within the bounds of the design requirements and scope. The ERFI is not to be confused with the Request for Information from AP-850-300 *Technical Subcontract Management*. The ERFI is for internal LANL use, while the RFI is for use between subcontractors and LANL. [AP-341-627r2] *Provides for controlled identification, notification, and resolution of technical questions initiated by project personnel (Project Management, Design Engineering, Procurement, etc.). Per SD350, when self-perform, Field Engineers handle form/liaison between engineering and Superintendents.*
Engineering Standards	The manuals and collections that constitute the LANL technical standards mandated by P342, *Engineering Standards*.
Engineering Standards Manual (ESM)	STD-342-100, the primary LANL Engineering Standards document containing the comprehensive design criteria and a few technical/administrative programs for all project types. *See also Tailored Standards Manual.*
Engineering Standards Discipline POC aka Standards POC	Every document in the Standards set has one person responsible for its upkeep and user assistance. The LANL Site Chief Engineer designates a POC for most subject areas of the Engineering Standards including civil, architectural, structural, mechanical, pressure safety, etc. The Owners (SMPOs) of other LANL Safety Management Programs (e.g., fire protection, radiation protection, electrical safety) and Security designate POCs in their areas of responsibility. [P342; ESM Ch. 1, Z10 and Section 100] *It is generally all a discipline's documents; however, there may be POCs for different scopes (e.g., Specs & Details). Listed on the ESM, Standard Detail, and POC/Technical Committee webpages along with any Alternate POCs and the SMPO. Described by ESM Ch. 1 Section 100.* *This is not the same role as Lead SME (search "LSME"), although often that person is also the POC.*
Engineering Standards SME	Assists the POC role as requested. *Often listed on the POC/Technical Committee webpage.*
Entrance facility	An entrance to a building for both public and private network service cables (including wireless) including the entrance point at the building wall and continuing to the entrance room or space. [ESM Ch. 19, D60, G50]
Environmentally Preferable Products (EPP)	Products with specific environmental or energy attributes. *Sustainable acquisition, or "green purchasing," refers to purchasing same. ESM Chapter 14 (e.g., Section G), its Attachment 1, and the chapter resources include requirements and guidance for the required sustainable acquisition.*

Term	Definition
Environmental qualification (EQ)	A process to ensure SSCs perform intended function under normal and off-normal conditions. [ESM Ch. 1, Z10] *See Z10 subsection by this title.*
Equipment	Assembly of components viewed as a functional entity within a system for providing a unique function within a system. Equipment is listed in LANL CMMS with a unique equipment tag. [AP-341-502]
Equipment and Infrastructure List (EIL)	A data base developed to track work/upgrade activities for the Pu facility. Segments of such work, and corresponding asset, will have an associated EIL number (e.g., 0787 or simply 787).
Equivalencies	Alternatives to how a requirement in a directive is met in cases where the "how" is specified. These represent acceptable, alternative approaches to achieving the goal of a directive's requirement. [DOE O 251.1D Chg 1 (Admin Chg), Departmental Directives Program; ESM Ch. 1 Z10; P310-1] *In CoE, this term is used when DOE/NNSA-directive-based matters arise; generally from and discussed in DOE O 420.1C 3.c.; otherwise, CoE uses "Alternate Method."* *DOE G 420.1-1A, 5.4.16 provides the following:* *Justification of equivalent codes and standards should demonstrate that the proposed design of the SSCs meets, or exceeds, the level of safety (e.g., meets, or exceeds, the level of protection) provided by the normally applied codes and standards. Evaluation of the level of safety should address:* • *Critical safety attributes of the SSCs;* • *Critical characteristics of the SSCs that are important to design, material, and performance of the SSCs;* • *The reliability of safety SSCs; and,* • *The margins of safety to failure of the SSCs (e.g., pressure, temperature, environmental conditions, and other design loads) provided by application of the code.* *For individual components, equivalency should be demonstrated by defining and verifying that the substitute component meets or exceeds these characteristics. Equivalencies should be well documented with a technical basis and should receive peer review by a technically capable and experienced designer.*
Equivalency Evaluation	A technical evaluation performed to confirm that a replacement item (not identical to the original) can satisfactorily perform its intended functions, including its safety functions. [AP-341-503] *See* Guidance on Technical Evaluations and Item Dedication *in the* Engineering Learning Guide *collection.*
Equivalent Quality Assurance Program	An equivalent quality assurance program that is alike in scope and implementation to SD330. [AP-341-513]
Equivalent Replacement	A replacement item not physically identical to the original. These items require equivalency evaluation to ensure that the intended functions, including its safety functions will be maintained. [AP-341-503] *See* Guidance on Technical Evaluations and Item Dedication *in the* Engineering Learning Guide *collection.*

Term	Definition
Error (software)	A condition deviating from an established baseline including deviations from the current approved computer program and its baseline requirements. (Ref. NQA-1). An error is something which requires a software change (major or minor). Examples of errors include (a) if a computer program used for design of a structural member provides incorrect design output, and (b) if a computer program turns on heating instead of cooling at high temperature settings. [ESM Ch. 21, SOFT-GEN]
Examination	1. In ASME pressure safety work, quality control work performed by the manufacturer, fabricator, or erector. *Inspection is a second layer of QA over this.* 2. In nondestructive examination, a procedure for determining a property (or properties) or other conditions or characteristics of a material or component by direct or indirect means. [ASTM E1316-24]
Examiner	In ASME pressure safety work, an "individual with the training and experience commensurate with the needs of the specified examinations. It is the person who performs the quality control examinations and is performed by the manufacturer, fabricator, or erector." [ASME B31.3; ESM Ch. 17]. *Oversight of such examinations is by an Inspector.*
Excavation/Fill/Soil Disturbance Permit Request (EXID)	Excavation/fill/soil disturbance request tool includes utilities locates, and may be accessed through the Integrated Review Tool/IRT. [P101-17]
Executive Order (EO)	Directive from the White House to heads of departments. *These are not self-invoking to DOE contractors; direction to implement them is normally through directives (e.g., DOE orders incorporated into contract or from field office contracting officer letter). Can be searched here.*
Exemption	A release from compliance with one or more requirements in a directive, as granted by the exempting organization's Head of the Departmental Element. [DOE O 251.1D Chg 1 (Admin Chg), Departmental Directives Program; ESM Ch. 1 Z10; P310-1] *In CoE, this term is used when DOE/NNSA-directive-based matters arise; generally from and discussed in DOE O 420.1C 3.c.; otherwise, CoE uses "Variance."*

Term	Definition

Exhibits	Segments of a LANL procurement contract. *Typically includes:*
	• *General Conditions (aka Exhibit A)*
	• *Special Conditions (aka Exhibit B)*
	  ○ *Older versions of above here*
	• *Technical Requirements (aka Exhibit D) -- see Statement of Work (SOW) in glossary. (Exh. D–I is the SOW per P850).*
	• *List of Drawings or Subcontract Reference Documentation (aka Exh. E)*
	For the following, see Exhibit portal with tabs here:
	• *Environmental, Safety and Health Requirements (aka Exhibit F)*
	• *Physical Security Requirements (aka Exhibit G-Physical)*
	• *Cyber Security Requirements (aka Exhibit G-Cyber)*
	  ○ *Navigating Exhibit F, G, H (video)*
	• *Quality Assurance Requirements (aka Exhibit H)*
	• *Subcontractor Submittal Requirements (aka Exhibit I) which works with LMS 01 3300 Submittal Procedures (for engineering submittals)*

Exhibit H	Procurement document prepared by the P-TSME and approved by a P-QSME. This Exhibit contains the QA requirements applicable to the procurement of items and/or services. [P841-1] *Online: Exhibit H.*
Existing Data	Data determined to be necessary for activities specified in Part I (of ASME NQA-1) but developed prior to the implementation or outside of Part I; or data published in scientific publications. Existing data does not include information that is accepted by the scientific and engineering community as an established fact (e.g., engineering handbooks, density tables, gravitational laws, etc.). [NQA-1; NQA-1 App. 3.1, AP-341-511, AP-341-513] Note: LANL adopted a site-wide ASME NQA-1 program with the issue of SD330, R2, (eff. 9/25/2012), LANL Quality Assurance Program. Data older than 9/25/2012 may be indeterminate
External Design Agency (EDA)	An organization independent from LANL that provides design products to LANL (Architect-Engineers, design-build contractors, other DOE sites, equipment fabricators, and vendors). [AP-341-620]
F	TOP
Fabricator	The firm fabricating structural steel, concrete, etc. offsite [ESM Ch. 16 IBC-GEN]
Facilities Information Management System (FIMS)	DOE/NNSA's Real Property Database of Record. [SD 430.1C]

Term	Definition
Facility	1. A synonym for Real Property and Installed Equipment. RP&IE is the land, improvements on the land such as buildings, roads, fences, bridges, and utility systems and the equipment installed as part of the basic building construction that is essential to normal functioning of a building space, such as plumbing, electrical, and mechanical systems. This property/equipment is also referred to as institutional or plant and was formerly known as Class A. [former DOE Order 4330.4B] *Note: In nuclear space, DOE O 420.1 and 10CFR830 uses facility to include all activities that occur within the facility also.* 2. From old *Acquisition and Project Management Glossary of Terms Handbook*: Any building, structure, or other improvement to real property including their functional systems and equipment; site development features such as landscaping, roads, walks, and parking areas; outside lighting and communications systems; central utility plants; utility supply and distribution systems; and other physical plant features. [compiled from DOE O 430.1; NA SD 430.1; 10 U.S.C. Sec. 2801(c)(1); and DOE G 413.3.21] *Note: ESM Ch. 1 Z10 and Section 200 consider utilities and site/horizontal infrastructure to be distinct from facilities.* 3. From former DOE-HDBK-1188, *Glossary of Environment, Safety and Health Terms*: FACILITY. Any equipment, structure, system, process, or activity that fulfills a specific purpose. Facilities do not have to be structures. Examples include accelerators, storage areas, fusion research devices, nuclear reactors, production or processing plants, coal conversion plants, magneto-hydrodynamics experiments, windmills, radioactive waste disposal systems and burial grounds, environmental restoration activities, testing laboratories, research laboratories, transportation activities, and accommodations for analytical examinations of irradiated and unirradiated components. [ESM Ch. 1, Z10; Ch. 13, Vol. 1, 1-99]
Facility Design Authority (FDA)	There is one LANL Site Chief Engineer Facility Design Authority and may be one or more Facility Specific Facility Design Authority; they are appointed by ALDFO to implement Conduct of Engineering within their designated scopes. [PD340 r8]. *Design Authority is defined separately; FDAR is below.*
Facility Design Authority Representative (FDAR)	Responsible for approving design inputs, implementing design control, approving design outputs, approving design requirements and design configuration, and identifying and maintaining technical baseline documents for a facility or project. Has the primary responsibility of assuring integration of safety and security into the design process. Qualified individuals are designated by the LANL Design Authority (or Site Chief Engineer) for each facility or project. The *CoE Training and Qualification program with P343 describes the training and qualification requirements for the FDAR position*. [P341; ESM Ch. 1, Z10]

Term	Definition
Facility Design Description (FDD)	A document that defines the facility, its systems and functions. Provides links between design documents, safety basis, and implementing procedures. The FDD focuses on facility structures, systems and components (SSCs), systems that are facility-wide, that are not subject of a System Design Description (SDD), and information that is common to multiple systems. [AP-341-612, ESM Ch. 1, Z10, *new facility template in Att. D*]
Facility Engineering Manager (FEM)	A supervisor in the technical organizational line (i.e., on an org chart). FEMs are generally in ES, PFE, or PIE divisions. *Most FEMs are also FDARs and vis-a-versa; however, they are different R2A2s and have difference qual standards.*
Facility Operation Director (FOD)	One of about six managers responsible for the operation, engineering, and maintenance of facilities and tenants for a functional or geographical portion of LANL. Described here. *FOD-by-building, Eng Mgr, and other assignments are in LANL Locator (also ARCHIBUS Web Central).* [SD900; ESM Ch. 1, 200]
Facility Service Request (FSR)	Online system that provides a mechanism for any LANL employee to identify and request work to a facility or SSC. This may include technical services, facility repairs, replacement or modification to real property or programmatic assets. [P950]
Failure Modes and Effects Analysis (FMEA)	An evaluation of an item's credible failure mechanisms and their effect on system and/or component functions. (DOE-HDBK-1230-2019 CGD Application) [AP-341-703] *See "A Guide to FMECA" in the Engineering Learning Guide collection.*
Federal Acquisition Regulation (FAR)	The primary regulation for use by all executive agencies in their acquisition of supplies and services with appropriated funds. The FAR also contains standard solicitation provisions and contract clauses and the various agency FAR supplements. [GSA] *The NNSA-Triad (LANL "Prime") contract includes some FAR provisions verbatim or modified, and some are passed down likewise in ASM pro forma.*
Field Change Request (FCR)	Form used to process field changes for design changes that do not rise to the level of a Design Revision Notice. FCRs may affect multiple disciplines, may affect multiple design documents, may generate new design documents, and may require reviews by multiple organizations. FCRs should not introduce new functions or requirements that exceed those defined in the project definition documents. [AP-341-519]
Field Engineer (FE)	LANL role responsible for ensuring that the technical aspects of construction and maintenance projects are in full conformance with the Approved Project Documents by monitoring facility maintenance and construction activities. This is accomplished by providing input during scoping, design, execution, and project closeout to ensure baseline documents are accurate, design documents are adhered to, and as-built configurations are verified. Field Engineers expedite project execution by identifying issues, coordinating technical solutions, and providing timely guidance to the constructor through approved procedures. [SD350; ESM Ch. 16] *SD350 r12 lists detailed R2A2s in section 4.15. Note: It's possible for a Subcontractor to have personnel with same job title.*

Term	Definition
Final Acceptance	The written acceptance issued to the constructor by the after project has achieved final completion. [ESM Ch. 15]
Final Completion	Occurs when the work is fully and finally completed in accordance with the construction subcontract documents and all deficiencies have been corrected. [ESM Ch. 16 IBC-GEN FM05; Ch. 15]
Final Design	The approved design output documents and approved changes thereto (ASME NQA-1). [AP-341-620] Project design phase marked by completion of the design effort and production of approved design documentation necessary to permit procurement, construction, testing, checkout, and turnover to proceed. (From DOE O 413.3B). The end of final design is marked by CD-3 approval for large projects and is equivalent to 90% review and 100% design completion for smaller projects. [AP-341-620]. *Also referred to as Title II.*
Final Design Baseline	The Final Design Baseline is composed of requirements and design documents that specify the components to be procured, constructed, and delivered by a project. It is developed during a project Final Design phase. Refer to Table SE-RM-1 for identification of contents [ESM Ch. 20]
Final Design Phase	The phase of system/facility acquisition that develops component-level detailed designs that can be procured, manufactured, and constructed. (Begins when Critical Decision 2 [CD-2] is received, ref. DOE O 413.3B) [ESM Ch. 20]
Final Product Validation	The process of confirming that a completed final product meets stakeholder and/or mission requirements and is suitable for its intended use in the actual operational environment – the right final product was built. [ESM Ch. 20]
Finding	A validated violation of a document or codified requirement regardless of the source. [AP-341-901]
Fire Protection	The concept of reducing injury and loss due to fire. This includes an administrative program (PD 1220, and definitions therein) and design and construction requirements (ESM Ch. 2, with definitions primarily in D40GEN).
Firmware	The combination of a hardware device, computer programs, and data that reside as read only software on that device. The firmware (sometimes referred to as embedded software) can perform very limited functions such as keypad controls or can provide significant function and control capabilities for control rod drives or safety systems. [ESM Ch. 21, SOFT-GEN]
Fiscal year (FY)	The U.S. government financial year that runs Oct–Sept. *FY example usage: FY24 or FY2024; 1QFY24 the first quarter of the FY, Oct–Dec. LANL FY closing effort necessitates that some accounting end the last full timecard week of Sept and some purchase accruals even sooner. CY means calendar year, Jan-Dec.*

Term	Definition
Form 410	Shorthand for ASM document 3041.00.0410, *Goods and Services Requiring Special Review and Approval*, a listing of items and services that need additional approval to purchase. *Found on EDRMS website or possibly here. Includes items and/or services controlled by engineering programs including buildings and structures, pressure safety, and welding.*
Freeware	Software that is available for use at no cost or for a nominal, usually voluntary fee. [ESM Ch. 21, SOFT-GEN]
Function	A task that must be performed. A function statement describes the capability necessary for a facility, system, or component to fulfill its mission. Describe a function using verb/noun combination such as "filter particulate." A function transforms inputs to desired outputs. In the example of "filter particulate," the function transforms an input fluid containing particulates into two outputs, the fluid without particulates and the particulates. A function describes what must be done, not how. Every function has at least one requirement associated with it. [AP-341-601, -602; ESM Ch. 21, SOFT-GEN]
Functional	The SSC is functional when it can perform its specified functional requirements and performance criteria. [AP-341-514]
Functional Analysis	A systematic process for determining the capabilities necessary to achieve the desired operational objectives and contract requirements. This process is iterative in nature, generating a hierarchy of functions that can be allocated to implementing SSCs. Also included is a process for decomposing [parsing or separating] a requirement into distinct parts that the project can satisfy through engineering of facilities physical systems and technological elements. [ESM Ch. 20]
Functionality Assessment (FA)	A disciplined evaluation of the ability of an SSC to perform its specified functional requirements and performance criteria upon discovery of degraded condition. [AP-341-514]
Functional Requirement	Requirements assigned to safety related SSCs that will ensure the Safety Function is met. Derived from hazard analysis and/or accident analysis and are defined and documented in facility safety analysis documents. [AP-341-607, AP-341-610]
Functional and Requirements Document (FRD)	Functional and Requirements Document, formerly Functions & Operating Requirements. Required for large projects, FRDs are developed from the Mission Need, Program Requirements Documents, and specific facility characterization data to quantify and qualify project requirements more concisely. [AP-341-601]. *Not required in some cases and, when present, a precursor to the RCD.* [ESM Ch. 11]
Functional Series Document	A type of Local Document that crosses directorate lines of authority (e.g., the same task may be performed by personnel from multiple directorates) to provide organizations, programs, facilities, or types of workers with greater detail. [PD311 *Requirements System and Hierarchy*; AP-341-401]. *CoE examples are this glossary, the APs, the Engineering Standards, and qual standards.*

Term	Definition
Functional Specification	A document that specifies the final product to be delivered by a project. The definition identifies, in quantifiable terms, the final product boundaries, interfaces, functionality, performance, constraints and other specific requirements. At LANL, the functional specification need is met by the FRD and RCD. [ESM Ch. 20]
Functional Testing	Testing of a component or subsystem against prescribed acceptance criteria, based on the owner's project requirements, vendor documentation, or industry standards to ensure that the SSC's functions and follows a prescribed sequence of operations according to the predetermined design requirements. [ESM Ch. 15]
G	TOP
General Documents	Technical documents that are not categorized as Priority or Support Documents but provide engineering details to support work activities within a facility. [AP-341-405 (VAR-10642); ESM Ch. 1, Z10]
General Plant Projects (GPP)	Projects for maintaining infrastructure at a site…miscellaneous, minor, new construction projects of a general nature, the total estimated costs of which may not exceed the Congressional authorizations of $5 million per project. These projects provide for designs or construction (or both); other capital alterations and additions; and improvements to land, buildings, and utility systems. They may include the construction of small new buildings, replacements or addition to roads, and general area improvement. Institutional GPP (i.e., IGPP) meet all normal GPP requirements but are of a general institutional nature benefiting multiple cost objectives and required for general purpose site-wide needs. IGPPs do not include projects whose benefit can be directly attributed to a specific or single program. [LANL Glossary, refers to Project Management Terms that may no longer exist]. *Above usage of "infrastructure" includes utilities, roads, buildings. These are smaller than line-item projects.*
General Test Criteria (GTC)	A set of parameters that are observed or measured during a test: (1) to determine if functional or performance requirements are met for a non-safety or non-permitted component, system, or integrated set of systems; or (2) to confirm an assumption used as a basis for design of such items. GTC can be either qualitative or quantitative. They are established only for those parameters that need verification through test and have a set of limits that are established by design. GTC specify the location of measurement or the conditions for a test if it is necessary to provide a context for validation of the parameter. GTC can be expressed as an upper limit, lower limit, or a range (e.g., not to exceed 40 ft per minute, not less than 40 feet per min, or 40 feet per min ±10%). GTC is the term applied to test criteria used to confirm compliance with requirements other than nuclear safety and regulatory permit requirements. [ESM Ch. 20]

Term	Definition
Government Furnished Equipment (GFE)	LANL-furnished property, products or in general to describe any LANL-furnished equipment for installation by the Construction Subcontractor in the work or used in its performance. [LMS 01 4216] *Subcontract documents use CONTRACTOR-furnished so that is potentially preferable while not typical in government work.*
Graded Approach	The process of ensuring that the level of analysis, documentation, and actions used to comply with a requirement in this part are commensurate with: (1) The relative importance to safety, safeguards, and security; (2) The magnitude of any hazard involved; (3) The life cycle stage of a facility; (4) The programmatic mission of a facility; (5) The particular characteristics of a facility; (6) The relative importance of radiological and nonradiological hazards; and (7) Any other relevant factor. [10 CFR 830.3; SD330; ESM 15, Ch. 5 Section I]
Guide	A document that provides recommended non-mandatory methods for accomplishing a task. Guides use terms such as "should" to express an expectation or "may" to identify a permitted method rather than compliance terms such as "must", "shall", or "will". [AP-341-401] *The DOE directives program includes Guides here.*
Guiding Principles, The (GP)	The group of criteria defined by Guiding Principles for Sustainable Federal Buildings and Associated Instructions issued by the Council on Environmental Quality in December of 2020. Often referred to as "The Guiding Principles," the document outlines a set of sustainable principles and practices to guide agencies in designing, locating, constructing, maintaining, and operating Federal buildings in a sustainable manner. [ESM Ch. 14]
H	TOP
Hazard	A source of danger (i.e., material, energy source, or operation) with the potential to cause illness, injury, or death to a person or damage to a facility or to the environment (without regard for the likelihood or credibility of accident scenarios or consequence mitigation). [DOE-STD-3009-2014]
Hazard Category (HC)	Per DOE-STD-3009 and SBP111-1 r7.1, for nuclear, the DOE-STD-1027 category (1, 2, or 3) or "Below (less than) Hazard Category 3 (<HC-3) or Radiological." For non-nuclear, *Facility Hazard Categorization,* the categories are Accelerator, Biological, Chemical (4 levels), Explosives, Firing Range, Nature of Process, Standard Industrial. *Some refine the former High, Medium, Low, Less-than-low, etc.* *Nuclear facilities that meet the criteria for their respective hazard category consistent with the provisions of DOE-STD-1027-92, Change Notice 1. Hazard Category 1, 2, and 3 DOE nuclear facilities, are required to have safety bases established in accordance with Subpart B of this part. Hazard categories are based on their radioactive material inventories and the potential consequences to the public, workers, and the environment. Hazard Category 1 represents the highest potential consequence and Hazard Category 3 represents the lowest potential consequence of the facilities required to establish safety bases (10 CFR 830.3).* [ESM Ch. 1, Z10; Ch. 5; Ch. 13, Vol. 1, 1-99]

Term	Definition
Hazardous material	Any solid, liquid, or gaseous material that is toxic, explosive, flammable, corrosive, or otherwise could adversely affect the health and safety of the public or workers or harm the environment. [DOE-STD-3009-2014, ESM Ch. 5 Section I]
Hazards Controls	Hazard controls mean measures to eliminate, limit, or mitigate hazards to workers, the public, or the environment, including: 1. Physical design, structural, and engineering features. 2. Safety structures, systems, and components. 3. Safety management programs. 4. Technical safety requirements; and 5. Other controls necessary to provide adequate protection from hazards. [10CFR830; ESM Ch. 21, SOFT-GEN]
High-Hazard Work	When maintenance, work involving a high-hazard environment and/or an extensive planning effort. This work process is further described in AP-WORK-002, *Work Planning.* [P950]
High-level Requirement	Functional and performance requirements and mission objectives that are normally defined by the customer in their technical requirements documents. Also included are technical requirements from regulations, directives, policies, and other customer and corporate documents. [ESM Ch. 20]
Hold Point (Inspection, Test, or Other)	A mandatory verification point in the sequence of work that is designated for review, which work must be held pending arrival of the designated organization. It cannot be bypassed without the specific release by an approved Hold Point Waiver. [P330-8; LMS 01 4000] *When QD-09 Hold Points is invoked in Exhibit H Part 1/*IQPA-IQ-FD-105*, constructor must notify LANL within 7 days for offsite work, 2 days for onsite. See also Witness Point in this glossary.*
Horizontal cable	A cable that extends from the telecommunications outlet/connector in the work area to the horizontal cross-connect in the telecommunications room. [ESM Ch. 19, D60]
Horizontal infrastructure	Structures that are longer than they are tall (e.g., roads, parking lots, bridges, tunnels). This is opposed to vertical infrastructure (e.g., shelters, benches, bicycle racks, trash receptacles, bus stop signs and poles, accompanying vegetation and landscaping, and park & ride facilities). *LANL may refer to vertical construction, a general term for buildings and such, as vertical infrastructure.*
I	TOP
ICC-IAS	ICC International Accreditation Service, Inc. [IBC; ESM Ch. 16.]
Identical item	An item that exhibits the same technical and physical characteristics (physically identical). [AP-341-503]

Term	Definition
Identification	The process of eliciting, searching for, and collecting requirements/constraints applicable to a design to ensure that the requirement set is comprehensive and complete. [ESM Ch. 20]
Identification String (IDS)	The system-subtype-sequence number ID string used for numbering and labelling. Formerly called CLI (component location identifier). [ESM Ch. 1, 200]
Important to Defense in Depth (IDID)	An SSC who's preventive or mitigative function is a contributor to multiple layers of safety as determined from safety analyses. Adapted from 10CFR830.3; DOE-STD-3009-2014; AP-341-802. *See graphic that follows the "Z" definitions.*
Implementation Verification Review (IVR)	A FOD or independent review of the implementation (or partial implementation) of safety basis changes, including page changes, new safety basis documents, safety basis revisions, NNSA conditions of approval, positive unreviewed safety question determinations, discovery condition Unreviewed Safety Question Determinations, justifications for continued operation, and Laboratory recommended actions approved by the NA-LA. [PD115]
Implemented Changes	Changes posted against facility technical baseline documents that have been implemented, tested, and accepted by Operations. [AP-341-402]
Implementing Document	A document (e.g., procedure, specification, drawing, etc.) that satisfies a requirement. [ESM Ch. 20]
Important to safety (ITS)	Obsolete term/concept. Now (see) Other Hazard Controls [ESM Ch. 12]
Information Handling Services	The IHS Engineering Workbench online code and standard service was the predecessor product name of Accuris. *Access here.*
Information Technology (IT) Equipment Room	A special server equipment room designed to NEC 645 and NFPA 75 (e.g., special fire and HVAC requirements). Such rooms are not addressed separately from server equipment rooms in this document. [ESM Ch. 19, D60]
Infrastructure	Horizontal constructions (e.g., roads, parking lots, bridges, tunnels, sidewalks, fencing, stormwater management) and, in some cases, vertical construction (buildings and other structures). [ESM Ch. 1 Z10] *Use of INFR in document metadata instead of a building number is appropriate for roads and UTIL for such not associated with a structure (and MULT for multi-structure). [AP-341-402]*
Initial Requirements Baseline (IRB)	The IRB is the first baseline and is developed by LANL for a facility or system. The IRB is typically developed from activities completed prior to Conceptual Design phase. [ESM Ch. 20]

Term	Definition
Inspection	Examination or measurement to verify whether an item or activity conforms to specified requirements [ASME NQA-1/P330-8]. *Includes inspections done by LANL or LANL-approved party for conformance to the design and LANL Standards, including those required by the IBC and ASME.* *In offsite structural work (e.g., IBC), LANL (as Owner) may delegate much of their verifier/QA Inspector role for IBC Special Inspection to the fabricator given sufficient independence (third party company or corporate autonomy), ref. ESM Ch. 16 IBC-GEN, IBC-IP, IBC-FAB].* *Note: Examination as used above and below is in a generic sense; in ASME pressure safety codes, Examination has specific expectations.*
Inspector	1. In ASME pressure safety codes, a "qualified person who verifies all required examinations and testing have been completed and inspects to the extent necessary to be satisfied that the design of the system conforms to all applicable examination requirements of the code and of the engineering design. [ASME B31.3; ESM Ch. 17 Att. GEN-1] *This is QA scope (second level), not QC (first level), and should therefore be independent of fabricating organization.* 2. In structural steel codes & standards, Inspector term is used for the (sub)contractor fabricator (QC), erector (QC), and verifier (QA) scopes.
Installation Instructions	Part of the Design Change Form. High-level engineering inputs necessary for modification implementation. Provide the minimum necessary guidance for controlling unusual activities or activities that directly affect installation of modification or operation of equipment. [AP-341-517]
Installation Verification	The initial portion of the Commissioning process includes observations and punch-lists recorded and performed by the field engineer to confirm that all equipment is installed in accordance with the specifications and drawings. [ESM Ch. 15]
Institutional Document	A document that applies to everyone in the institution, or to a broad cross-organizational functional area. [PD311 Requirements System and Hierarchy; AP-341-401]. *CoE examples are PD340, P341, P342, and P343.*
Institutional Evaluated Suppliers List (IESL)	A list of suppliers whose QA management systems, performance history, and/or quality records have been evaluated and determined to have the capability to supply items or services in accordance with established requirements. [P841-1, *Quality Procurements*]. *Suppliers listed on the IESL are currently approved to provide LANL with products and/or services within their stated scope of supply, and for the stated location(s). It is the responsibility of both the procurement requester and the buyer to ensure the products/services needed reasonably match those listed in the IESL as well as ensuring compliance to any listed restrictions. The IESL does not attempt to provide exact legal business entity names or a comprehensive list of approved products and/or services.*

Term	Definition
Institutional Quality & Performance Assurance (IQPA)	Provides critical, expert, and timely services to ensure operational excellence is achieved and sustained by providing trustworthy and transparent continuous improvement and quality systems in support of LANL. *IQPA Procedure Links.xlsx on SharePoint.*
Institute of Nuclear Power Operations (INPO)	Organization tasked with monitoring and evaluating appropriate safety standards — including those for management, quality assurance, and operating procedures and practices at nuclear facilities. *Many documents produced were the basis for conduct of engineering practice nationally and within DOE; while not all publicly available, DOE was affiliated in the past and LANL CoE has a partial collection of older ones.*
Integrated Assessment Schedule (IAS)	The schedule of assessments. An initial version of the schedule exists at the beginning of each fiscal year. [AP-341-901]
Integrated Project Team (IPT)	A team formed and led by a LANL project manager (when assigned) and comprised of functional experts needed to execute capital asset work, such as engineering, procurement, construction, etc. [SD350; AP-350-100, 101; AP-341-620; ESM Ch. 1 Z10] *When ES, formed per DI-ES-EPD-010.*
Interdisciplinary Coordination	Squad checks to ensure a quality design is submitted to LANL's Stakeholders. [AP-341-627, Design Coordination]
Interdisciplinary Technical Review (ITR)	A technical review of the proposed design change to assess the impacts of the change to the facility, activity, or operation that involves all potentially affected disciplines and organizations. [DOE-STD-1073; AP-341-620; ESM Ch. 1 Z10 Att. C]. *Sometimes also known as the Owner's Review. Team to support IPT per DI-ES-EPD-010.*
Interface Requirement	A functional or performance requirement, or a constraint, imposed on the boundary between two SSCs. An interface requirement can address boundary design details, location, connections, input/output characteristics, controls (engineered and administrative), physical interactions (e.g., vibration) or functional interactions. Interface requirements are typically imposed by joint decisions between two organizations, by pre-existing conditions or decisions, or imposed by the Customer or Stakeholder (e.g., existing external facility). A project may not change interface requirements unilaterally. [ESM Ch. 20]

Term	Definition
Interface Requirements	Relates the boundary between two systems. The two interfacing systems may be within the same facility or in different facilities. When two different facilities are involved, the interface is referred to as an external facility interface. There are three types of interface requirements: • Performance interface specifies how well a function is performed at a system boundary. • Interface constraints specify codes and standards applicable to the system interface, specific design, operating or maintenance configuration and essential features, etc. • Physical interface specifies characteristics at the system boundary. Those characteristics may include materials, dimensions, tolerances, finish size, weights, component type, dynamic limits, equipment envelopes, layout locations, etc. [AP-341-602]
International Building Code (IBC)	Primary model building code published by International Code Council (ICC). *LANL adopts and amends through the Engineering Standards (e.g., ESM Ch. 16 and others). Before LANL adopted the IBC in the early 2000's, the UBC was used. IBC Chapter 2 is Definitions.*
International Existing Building Code (IEBC)	Model building code for existing structures published by ICC. *LANL adopts and amends as it does with the IBC and other codes.*
Invoked Technical Standard	A DOE or other Technical Standard that is called upon, in part or in whole, as a required method in a DOE Directive based on a clear requirement statement. The following is an example of an invoking requirement statement: "Safety analysis and supporting design must be developed and integrated in accordance with DOE-STD-1189-2016." (DOE Order 420.1C) [DOE O 251.1D Chg 1 (Admin Chg), Departmental Directives Program; ESM Ch. 1 Z10; P310-1] *This category of standard has the highest bar for gaining equivalency or exemption (versus "Applicable Technical Standard" per DOE O 420.1C, which have lower requirements for equivalency.)*
Item	An all-inclusive term used in place of any of the following: appurtenance, assembly, component, equipment, material, module, part, structure, product, software, subassembly, subsystem, system, unit, or support systems. [DOE Order 414.1D, Admin. Chg. 2); ESM Ch. 1 200; AP-341-502, AP-341-703, AP-341-901] *CMMS captures "equipment" and their "components" differently; "item" is used in Section 200 to refer to both and some structures generically.*
J	TOP
	reserved for future use

Term	Definition
K	TOP
Key Performance Parameters	Required facility or system characteristics for the final product to be delivered to the client (e.g., integrated facility or system), relating to the ability to achieve the operational mission when used by trained operators in the intended operational environment under specified conditions. KPPs are used to focus development and associated decisions in a manner that ensures these parameters are met by the final product. They are used as part of the performance baseline at CD-2. [ESM Ch. 20]
L	TOP
Laboratory	When capitalized means LANL. Otherwise, a space usage for R&D or analysis.
Laboratory Implementation Requirements (LIR)	Laboratory Implementation Requirements [ESM Ch. 13, Vol. 1, 1-99]. *Obsolete Institutional Policy document type, now a PD, P, or SD series.*
LANL Building Code (LBC)	The IBC as amended by LANL (e.g., in ESM Ch. 16, IBC-GEN Att. A). Where the LANL Standards invoke the IBC, interpret to mean the LBC (except in obvious references to the source document; the term "IBC" is used currently due to higher recognition). [ESM Ch. 16 IBC-GEN]
LANL Building Official (LBO)	As delegated to LANL by NNSA, enforces the International Building Code (IBC), International Existing Building Code (IEBC), and other building codes and standards referenced by ESM requirements. Enforced through design (aka plan) reviews and approval (permitting) of design documents and selected changes thereto, testing and inspection and its oversight (QC, QA), and walkdown/certificate of occupancy (CoO). *Except for most inspections, the FDAR is authorized to perform the administrative functions for many lower risk modifications in operating facilities when allowed by ESM Chapter 16.*
LANL Building Official – Design Package Reviewer (LBO-DPR)	Person(s) performing the final review and permitting of the Highest Risk projects per the Building Code Program. [ESM Ch. 16 IBC-GEN]
LANL Building Official Plan Examiner	Design reviewer SMEs delegated to review Highest Risk ESM Ch. 16 IBC-GEN projects, per its vetting process. *Listing and request links are on the ES-Division's LANL Building Official webpage.*
LANL Commissioning Authority (LCA)	An independent commissioning process person designated by the LANL Projects Integration Division to manage the commissioning at LANL and, for facilities, to represent the LANL Building Official's interests in matters related to commissioning. Shall meet Level III qualifications of NQA-1 Part III, Subpart 3.1, Non-Mandatory Appendix 2A-1. [ESM Ch. 15]
LANL Existing Building Code (LEBC)	Amendments to the IEBC for buildings and systems in ESM Ch. 16 IBC-GEN, App. B.

Term	Definition
LANL Inspector	A LANL (e.g., Triad) or LANL-subcontracted employee performing duties approved by the LANL Chief Inspector. May be written simply as inspector. [ESM Ch. 16 IBC-GEN]. *See also Qualified Inspection Agency.*
LANL Master Specifications (LMS)	The Construction Specifications Institute (see definition) format sections in the STD-342-200 collection. [ESM Ch. 1 Z10 Att. F]. *Each section is an administrative (Division 01) or work-result-specific (Divs 2-43) template to be finalized and combined into a specification which is a construction output document addressing construction-type work, fabrication, and/or maintenance (maintenance examples: piping repairs and testing, carpeting, and other similar replacements).*
Leadership in Energy and Environmental Design (LEED)	A green building rating system developed by United States Green Building Council (USGBC) and certified by Green Business Certification Inc. (GBCI). [ESM Ch. 14]

Term	Definition

Lead SME (LSME)	Within ES Division, an SME responsible for fulfilling many of the technical and administrative tasks formerly performed by the discipline-focused EPD Team Leaders. The LSMEs are designated by the Division Leader and are assigned to one of the ES groups but have responsibilities for ES broadly. *The ES organization chart lists the LSMEs. The creation of LSMEs does not affect the use of the "SME" concept or term in other matters such as IBC/IEBC SME listing, ESM SMEs (or POCs), or SMEs in a very general sense — these remain. [**They are not synonymous with Standards POC**.]*
	
	LSMEs are responsible for the following tasks. This list is not all-inclusive but represents most routine responsibilities and tasks are specific to the individual's respective discipline. A major thrust is developing our employees.
	
	• *Identify candidates and participate interviews for applicants within their discipline, as needed*
	• *Help maintain the Training and Qualification program for their discipline (with CoE)*
	• *Lead periodic (monthly minimum) meetings for their respective discipline across the three design groups. Topics should include:*
	  ○ *General continuing education topics*
	  ○ *Emerging technologies within their field*
	  ○ *Discipline-specific qual training*
	  ○ *Dissemination of changes in Lab policy and Conduct of Engineering documents that pertain to their discipline*
	• *Lead or support updates to the ESM chapters and master specifications applicable to their discipline (many LSMEs will also be Standards POCs)*
	• *Support questions and issues on behalf of the LANL Building Official*
	• *Review and comment on relevant CoE AP revisions*
	• *Lead or support initiatives within their discipline*
	• *Participate in Oral Checkouts for applicants within their discipline*
	• *Provide feedback to managers during performance reviews*
	• *Participate in mentoring*
	• *Approve calculations, as needed*
	• *Support management self-assessments*
	• *Be design/analysis software Owners/gatekeepers, both safety and non-safety (https://edwebapps.lanl.gov/essoftwareinventory/inventory.aspx)*
	• *Ensure work produced across the Project Delivery groups are consistent and look like they are produced from the same division*
	• *Approve memos that pertain to their discipline.*
	[ES-DO-Memo-22-019, 9/29/2022 (with minor updates)]

Lessons Learned	The capture of what went badly or well in a project, operations, maintenance, or other context for near-term process improvement action and future consideration. *DOE OPEXShare is headquarters' system for operating experience, has reports, best practices, other useful items; LANL has its own OPEX site in iLink within Devonway via Miramar interface.*

Term	Definition
Less-Than-Minor Computer Program Change	A change that is not a major or minor computer program change and: • adds, deletes, and/or modifies ML-4 performance function code, • adds, deletes, and/or modifies code that does not modify a Performance Function (all MLs), or • imparts changes without adding, deleting or modifying design and/or analysis output values (all MLs). Examples: Modify code to increase the ramp time on an ML-4 soft start pump. Install security patch/service pack updates. An OTS software patch that includes a code change to prevent a screen from "freezing" or loading slowly (all MLs). Add/modify code clarifying notes (all MLs). Modify code to produce multiple reporting formats (all MLs). (Definition developed for this chapter). [ESM Ch. 21, SOFT-GEN]
Level 1 Alteration (IEBC)	Includes the removal and replacement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose. Most true like-for-like or replacement-in-kind is this category. *Must follow IEBC Ch. 3 & 7*. [ESM Ch. 16 IBC-GEN PPD form FM01.]
Level 2 Alteration (IEBC)	System reconfiguration, extension, additional equipment installation, or removal Must follow IEBC Ch. 3, 7, and 8. *LANL has subdivided Level 2 for administrative matters only (IEBC met regardless). Level 2B generally includes possible egress aspects (workspace reconfiguration or door or window addition or elimination) and/or life safety or related systems affected; complete 2B definition is in Section IBC-GEN Table GEN-3 Three-tiered Graded Approach. Level 2A is Level 2 work not meeting Level 2B.* [ESM Ch. 16 IBC-GEN PPD form FM01.]
Level 3 Alteration (IEBC)	Applies when a major building renovation or reconfiguration work area exceeds 50 percent of the aggregate area of the building. *Must follow IEBC Ch. 3 and 7-9, plus warrants an RP 8 review.* Work Area: That portion or portions of a building consisting of all altered spaces as indicated on the construction documents. Work area excludes other portions of the building where incidental work entailed by the intended work must be performed and portions of the building where work not initially intended by the owner is specifically required by code. Applies to altered spaces, not systems. [ESM Ch. 16 IBC-GEN PPD form FM01.]
Levels of Rigor	The level of strictness, detail, validation, and judgment to be applied to a specific task or evaluation. [ESM Ch. 15]

Term	Definition
Life-cycle Cost (LCC)	The sum total of all direct, indirect, recurring, nonrecurring and other related costs incurred or estimated to be incurred in the planning, design, development, procurement, production, operations and maintenance, support, recapitalization and final disposition of real property over its anticipated life span for every aspect of the program, regardless of funding source. [DOE O 413.3B Chg 7] *Discussed in ESM Ch. 1 Z10 Attachment E,* Life Cycle Cost Methodology Guidance*; Ch. 14 for energy decisions per 10CFR436, and shared Life-Cycle Cost Analysis (LCCA) Calculator and Resources webpage. LCCE means life-cycle cost effective.*
Like-for-Like Replacement	The replacement of an item with an item that is identical. [AP-341-503] *See also "Identical Item," Guidance on Technical Evaluations and Item Dedication in the Engineering Learning Guide collection.*
Line Item	A distinct design, construction, betterment and/or fabrication of real property for which Congress will be requested to authorize and appropriate specific funds. A full-scale test asset or other pilot/prototype asset primarily constructed for experimental or demonstration purposes, but planned to become DOE property and continue to operate beyond the experimental or demonstration phase is included in this definition. [DOE O 413.3B Chg 7 (LtdChg), Program and Project Management for the Acquisition of Capital Assets; SD350] *An entry (appropriation line) in a presidentially signed congressional bill.*
Local Document	A document that applies to specific organizations within a directorate, program, facility, or type of work/workers, and do not apply to the institution. [PD311, *Requirements System and Hierarchy*]. *An example is a work instruction.*
Los Alamos National Laboratory (LANL)	A government-owned, contractor-operated (GOCO) site in the U.S. Dept. of Energy's NNSA enterprise and a Federally Funded R&D Center (FFRDC). *There's a separate contract for legacy cleanup with N3B through the DOE Environmental Management (DOE-EM) Los Alamos Field Office since April 2018.*
Los Alamos National Security, LLC (LANS)	The prime management & operating (M&O) contractor at LANL from 2006 to October 31, 2018. Take all references to LANS in the Standards to mean Triad Nuclear Services (TNS), the prime contractor beginning November 1, 2018, or its successor, except when a historical reference. [ESM Ch. 1 Z10] *Before LANS was Univ. of California alone.*
Low-Hazard Work	When maintenance, work requiring minimal planning. Low-hazard work may be routinely accomplished using FSRs, unplanned work orders, or standing work orders. This work process is further described in AP-WORK-002, *Work Planning.* [P950]
M	TOP
Major Change Document (software)	A document change that is not a minor document change. A major document change includes revisions, changes, or modifications to a document (e.g., procedure, work instruction, drawing, etc.) which impact the effective implementation of the requirement(s). [ESM Ch. 21, SOFT-GEN]

Term	Definition
Major Computer Program Change	A change that: • the Software Responsible Line Manager (SRLM) or computer program supplier designates as a Major Change, • adds or deletes an ML-1, ML-2, or ML-3 SSC "Performance Function" (including bounding set point changes), • modifies ML-1 or ML-2 SSC performance function code, excluding clarifying notes, • adds, deletes, or modifies design and/or analysis output values of ML-1, ML-2, or ML-3 calculations, • recodes to another language, or • modifies a significant number of lines of code. Note: A Major OTS computer program change is often indicated with increment increase in version number (e.g., change from version 1 to 2). An evaluation of the software, however, is required to determine whether the version release is a Major Change. *Examples: A change from Delta V control system software from version 7.0 to version 8.0. A change that adds code to implement an interlock functional performance requirement that an ML-3 laser system cannot be activated until area doors are locked. A change that modifies code on ML-2 ventilation system backdraft damper so that damper closure does not slam shut and potentially damage the damper assembly. A change in the algorithm or databased used for calculating the water flow rate in an ML-3 fire protection piping system design. A change in coding language from C to C++. A version change where 40% of the lines of code were modified. [ESM Ch. 21, SOFT-GEN]*
Major Modification	Change to a nuclear facility that substantially changes the existing safety basis [adaptation of DOE-STD-1189]. *Determination is made through a checklist (see SBP114-1, Safety Basis Development for Projects, Att. 2) [ESM Ch. 1, Z10]*
Major Revision	A change in the intent, scope, purpose, responsibilities, safety, or technical content described in document. [AP-341-401]

Term	Definition
Management Level (ML)	1. Reflects the consequence of failure portion of the risk. Conduct of Engineering requirements are graded per the level to reduce risk. ML-1 is most stringent, and ML-4 are the least stringent. All levels have some level of quality controls. [SD330; P341] 2. Grading based on an estimation of consequence of failure to LANL as an institution, which helps in establishing the degree of technical/administrative oversight and control required to ensure that SSCs can meet their required function in the protection of the public, the worker, the environment, classified and SNM assets, or their ability to support meeting high-level institutional mission requirements. [AP-341-502; ESM Ch. 1, Z10] ML-1: • An SSC and activity of Hazard Category 2 or 3 Nuclear Facility that performs Documented Safety Analysis (DSA) credited Safety Class (SC) function(s). • An SSC and activity of Accelerator Facility that performs Safety Assessment Document (SAD) or Accelerator Safety Envelope (ASE) designated public protection function(s). • An SSC and activity of High Hazard Nonnuclear Facility that performs function(s) identified in the Facility Safety Analysis (FSA) for protection of the public. ML-2: • An SSC and activity of Hazard Category 2 or 3 Nuclear Facility that performs DSA designated Safety Significant (SS) function(s) • An SSC and activity of Accelerator Facility that performs SAD or ASE designated worker protection function(s) • An SSC and activity of High Hazard Nonnuclear Facility that performs function(s) identified in the FSA for protection of the uninvolved or noninvolved worker. ML-3: See SD330, *LANL Quality Assurance Program*, Attachment C *Screening Criteria for ML-3.* ML-4: SSCs and activities that do not meet the requirements of ML-1, 2, or 3.
Management Self-Assessment (MSA)	In the readiness process of PD115, following preparation, the Line Management uses a MSA to determine the adequacy of their preparations.
Master Equipment List (MEL)	A subset of Computerized Maintenance Management System (CMMS) data used for configuration management of items including data for unique identification such as associated OpSystem and System, and key attributes such as management level and location. [ESM Ch. 1, Section 200; ESM Ch. 8 D3060.90] *Project Equipment List is precursor.*

Term	Definition
MasterFormat®	The architecture, engineering, and construction (AEC) industry's gold standard for organizing and communicating specifications and work results for construction projects. [CSI]. *The 48-division and section numbering/naming scheme used by LANL's* Master Specification *(LMS) collection. Not to be confused with MasterSpec, a proprietary collection of generic, AIA-affiliated office master templates from Deltek (previously ARCOM) in their SpecPoint product.*
May	Denotes permission, neither a requirement nor a recommendation. [DOE O 426.2]. A directive term that indicates an optional action or expectation. [PD115]
Mechanical Temporary Modifications	Jumpers, blind flanges, blocked (gagged) valves or dampers, system additions (additional pumps, instrumentation, controllers, etc.), and temporary set point changes not part of a routine maintenance, testing, or operating procedure. [AP-341-504]
Manhole (MH)	A vault located in the ground as part of an underground telecommunications duct system and used to facilitate placing, connecting, and maintenance of cables as well as the placing of associated equipment, in which it is expected that a person will enter to perform work. [ESM Ch. 19 G50] *Increasingly preferable is maintenance hole, utility hole, person hole, or people hole (sewer hole when such).*
Measuring and Test Equipment (M&TE)	Devices or systems used to calibrate, measure, gage, test, or inspect to control or acquire data to verify conformance to specified requirements. [LMS 01 4000] *Generally portable; such installed devices are "instrumentation."*
Minor Change Document	A document change, as defined by the governing document control program, that includes but is not limited to inconsequential editorial corrections, grammatical and spelling changes, organizational name and acronym changes, and similar type changes. [ESM Ch. 21, SOFT-GEN]
Minor Computer Program Change	A change that is not a major computer program change and: • adds or deletes an ML-4 SSC Performance Function (including bounding set point changes), • modifies ML-3 SSC Performance Function code, excluding clarifying notes, or • adds, deletes, or modifies design and/or analysis output values of ML-4 calculations. Note: A minor OTS software change is often indicated with a fractional increase in version number (e.g., 1.1 or 1.01). An evaluation of the software, however, is required to determine whether the version release is a Minor Change. Examples: Add code to implement automatic pump shut-off performance requirement on ML-4 sump low-level alarm. Modify code to fix a coding error on an ML-3 heating/cooling system so that cooling, rather than heating activates at high temperatures. Change the algorithm for calculating the current that flows in an ML-4 electric power system under abnormal conditions. [ESM Ch. 21, SOFT-GEN]

Term	Definition
Minor Maintenance (MM)	A list of work activities preapproved by the Facility Operations Director (FOD), characterized by low hazards, and requiring no detailed planning (e.g., relamping). FOD preapproval assures that facility hazards and program priorities are appropriately factored into grading decisions. This is further described in AP-WORK-001, *Work Initiation, Screening, and Acceptance.* [P950]
Mission Dependency Index (MDI)	NNSA's risk-based, *consequence to mission* metric that assigns a quantitative score to a real property asset. This score informs decision makers on the potential impact the loss of the asset would have on NNSA's mission. [SD 430.1C]. The MDI score is a 1-100 score calculated for each facility to measure its impact to the mission by combining the consequences if the facility was lost, the difficulty to replace it, and the interdependency of it to other facilities. MDI also links assets to the core capabilities they support which provides greater insight for understanding risks. [SD330 *LANL Quality Assurance Program*) [AP-341-405, AP-341-502]. *MDI Scores are published in ARCHIBUS Web Central. For a single list, however, access Infrastructure DATA Group and open the most recent fiscal year "Official MDI, RN, DM, & RPV." The MDI score is the last column.*
Mission Need Statement (MNS)	[For a large project,] the primary document supporting the acquisition executive's decision to initiate exploration of options to fulfill a capability gap including but not limited to acquisition of a new capital asset. The mission need statement document identifies a capability gap between the current state of the program's mission and the mission plan. It is the first step in the identification and execution of a DOE project. [AP-350-101]
Mixed Waste (MW)	MW contains both hazardous waste (as defined by RCRA and its amendments) and radioactive waste (as defined by AEA and its amendments). It is jointly regulated by NRC or NRC's Agreement States and EPA or EPA's RCRA Authorized States. The fundamental and most comprehensive statutory definition is found in the Federal Facilities Compliance Act (FFCA) where Section 1004(41) was added to RCRA: "The term 'mixed waste' means waste that contains both hazardous waste and source, special nuclear, or byproduct material subject to the Atomic Energy Act of 1954." [ESM Ch. 10]
Model	Simplifications of the real world constructed to gain insights into select attributes of a particular physical, biological, economic, engineered, or social system. [ESM Ch. 21, SOFT-GEN]
Moderate-Hazard Work	When maintenance, work requiring a moderate level of planning, cost estimation, and research before execution. This work process is further described in AP-WORK-002, *Work Planning.* [P950]
Modification	1. In a general CoE sense, a change to an existing SSC, document, or activity. *The IEBC terms these Alterations. Control of modifications, known as change control, is a major pillar of configuration management and thus CoE. PFE has a Modification Eng. Manager overseeing such work at TA-55.* 2. In the 2021 IBC and IEBC (104.10), where code official allows equivalent alternatives. *See also Alternate Method*.

Term	Definition
Must	Denotes a requirement [DOE O 426.2]. A directive term that indicates a required action or expectation [PD115]. *Shall means the same.*
N	TOP
Nameplate	The plate or label attached to a component by the manufacturer to provide applicable component identification and design data, such as temperature, pressure, flow, etc. [AP-341-510]
National Nuclear Security Administration (NNSA)	A semi-autonomous agency of the Department of Energy (DOE); NNSA is headed by the Administrator. *LANL is operated under contract to the Department of Energy and NNSA.*
Natural phenomena hazard (NPH)	An act of nature (e.g., earthquake, wind, tornado, flood, precipitation, volcanic eruption, or lightning strike) that poses a threat or danger to workers, the public, or to the environment by potential damage to structures, systems, and components. [DOE-STD-1020]
NPH Design Category (NDC)	Refers to the DOE/LANL five (1–5) category system for design/analysis of nuclear SSCs. [DOE-STD-1020; ESM Ch. 5 Section I, III] *SDC is for the seismic design category and most well-known (caution this is NOT the IBC's SDC A–F categorization); WDC is for wind, FDC flood, and PDC precipitation. Used along with Limit State (LS). Ch. 5 Section I includes a sometimes-conservative crosswalk from old PC to NDC. See also Performance Category.*
Net-zero emissions (NZE) building	A highly efficient building, connected to any combination of on-building, on-site, local utility-scale, or purchased carbon pollution-free energy, designed, and operated such that its scope 1 and 2 greenhouse gas emissions from all operational end uses are zero on an annual basis. [ESM Ch. 14] *Chapter 14 contains other definitions related to sustainable design.*
New Information (NI)	Information that could indicate a PISA in the current facility safety basis. NI can result from discovery of errors, inaccuracies, or omissions in the current safety basis, discovery of a discrepant as-found condition, vendor information, or occurrence of an event. In order for the information to be considered "NI", the information must be applicable to one or more onsite HC-2 or HC-3 facilities/activities, valid (reliable, accurate, and traceable), and related to questioning the adequacy of a facility's ***implemented*** safety basis. [SBP-112-5-R6; AP-341-802]
New Mexico Administrative Code (NMAC)	Regulations issued by the state. *LANL follows as appropriate.* *https://www.srca.nm.gov/nmac-home/nmac-titles/ or* https://nmonesource.com/nmos/en/nav.do
Nonconformance	A deficiency in characteristic, documentation, or procedure that renders the quality of an item or activity unacceptable or indeterminate. (NQA-1). *Triggers use of P 330- 6, Nonconformance Control and Reporting, and normally an NCR form.*

Term	Definition
Nonconforming Condition	A deficiency in characteristic, documentation, or procedure that renders the quality of an item or activity unacceptable or indeterminate. [P330-6; AP-341-514]
Nondestructive Examination (NDE)	The development and application of technical methods to examine materials or components in ways that do not impair future usefulness and serviceability to detect, locate, measure, and evaluate flaws; to assess integrity, properties, and composition; and to measure geometrical characteristics. NDE/NDT typically includes radiographic testing (RT), magnetic particle (MT), ultrasonic testing (UT), liquid penetrant (PT), electromagnetic testing (ECT), neutron radiographic, leak testing (LT), acoustic emission testing, and visual testing (VT). [ASTM E1316-24; ~P330-5; ESM Ch. 13, Vol. 1, 1-99; Vol. 6, 6-02 Att. 1] *"NDE," is generally preferred by ASME and LANL but NDT (T=testing; ASTM/original term) and NDI (I = Inspection, often DoD/aerospace) essentially mean the same. Regarding visual examination, depending on the application, this may require control as an NDE process (VT) versus weld inspection per ESM Ch. 13. ESM Ch. 13, Vol. 6, 6-02 and its Att. 1 contain additional NDE definitions.*
Non-NQA-1 qualified supplier	A supplier that did not develop and maintain the software in accordance with an ASME NQA-1 quality assurance program. [ESM Ch. 21, SOFT-GEN]
Nonreactor Nuclear Facility	A facility, activity, or operation that involves or will involve radioactive and/or fissionable materials in such a form and quantity that a nuclear or a nuclear explosive hazard potentially exists to workers, the public, or the environment, but does not include accelerators and their operations and does not include activities involving only incidental use and generation of radioactive materials or radiation such as check and calibration sources, use of radioactive sources in research, experimental, and analytical laboratory activities, electron microscopes, and X-ray machines. [10 CFR 830.3; ESM Ch. 1, Z10]
Non-safety software	As determined using Form 2033, software that is not otherwise determined to be safety software. Non-safety software includes risk significant and commercially controlled software. [ESM Ch. 21, SOFT-GEN]
Non-SSC software	Software used in design, analysis and/or for administrative control. This software does not physically monitor and/or control SSCs. Examples: Piping system design/analysis software (CAESAR II®), fire protection system design software (SprinkCAD), area lighting calculation software, spreadsheets used to perform structural load calculations, safety analysis software used to perform dispersion modeling, software used to track facility combustible loading, and software used to track Technical Safety Requirement (TSR) implementation. [ESM Ch. 21, SOFT-GEN]
Noteworthy Practice	A positive condition that is beyond normal performance expectations or standard practices and is worthy of emulation, commendation, and communication to others as a good example. [AP-341-901]

Term	Definition
NQA-1 Certificate of Conformance (C of C)	A document signed or otherwise authenticated by an authorized individual certifying the degree to which items or services meet the specified requirements. NQA-1 C of C's must meet the criteria of NQA-1 2008 Part I, Requirement 7, Section 503 *Certificate of Conformance.* [P841-1 based on NQA-1; Exh. H QD-01; LMS 01 4216 r4]. *For nuclear safety items (e.g., QL-1) primarily. [AP-341-703]. See Certification Document for other CoC-related documents.*
Nuclear Facility	Reactor and non-reactor nuclear facilities where an activity is conducted for or on behalf of DOE that includes any related area, structure, facility, or activity to the extent necessary to ensure proper implementation of the requirements established by 10 CFR 830 (see DOE-STD-3006). [PD115]
Nuclear Regulatory Commission (NRC)	Organization focused on commercial nuclear (versus DOE/NNSA) — reactor safety oversight and reactor licensing, materials safety oversight and materials licensing for a variety of purposes, and waste management of both high-level waste and low-level waste. *A few NRC documents and notices are useful in a DOE context and are publicly available.*
Nuclear Security Enterprise (NSE)	The NNSA organizations that manage nuclear weapon data (NWD) and/or design, manufacture, or test nuclear weapons or nuclear weapon components. [source] *NNSA HQ and every NNSA office, lab, and site. Part of the greater DOE Enterprise.*
O	TOP
Operating Environment	A collection of software, firmware, and hardware elements that provide for the execution of computer programs. (Ref. NQA-1). It is also the location and conditions (environment) where the software will be used or operated to meet is intended function. [ESM Ch. 21, SOFT-GEN]
Operating Facility	A facility that is post-startup/turned over from construction phase and thus managed by an operations organization. [ESM Ch. 1 Z10]
Operation Requirements	Qualitative or quantitative statements that identify the essential capabilities needed to accomplish the Functional Requirements. [AP-341-602]
Operational Readiness Review (ORR)	A disciplined, systematic, documented, performance-based examination of facilities, equipment, personnel, procedures, and management control systems for ensuring that a facility can be operated safely within its approved safety envelope as defined by the facility safety basis plan. The ORR provides the basis for the Department to direct startup or restart of the facility, activity, or operation. [DOE O 413.3B]. *See also Readiness Assessment.*
Operations and Maintenance (O&M) Criterion	Functional Series documents that define criteria and comprise the LANL O&M Manual for SSCs as required by P950, *Conduct of Maintenance*. *LANL O&Ms here. See also Preventive Maintenance Instructions (PMI). Some non-LANL O&M guides here (WBDG).*

Term	Definition
Opportunity for Improvement (OFI)	A situation, event, or product where an opportunity exists for preventive, corrective, or proactive actions to be taken to reach a desired outcome. Typically, an OFI is not a violation or a requirement, but could lead to one. An OFI may also cover a condition that is outside the scope of quality issues, such as repeated slippage or scheduled activities. [AP-341-901]
OrgEx	DOE's Organizational Excellence website. A "platform for transferring relevant knowledge throughout the DOE complex. It will become a useful centralized tool for sharing best practices, news, information, and insights to support the pursuit of organizational excellence…It will allow sharing the practices developed inside an organization with other organizations so that those organizations can adapt those practices to their specific cultural and organizational settings. The website also will allow managers and employees to look outside their organization for global standards and best practices to improve the performance and reliability of their organizations." *A lot of content is Federal-specific, but perhaps most useful to LANL are the Communities of Practices (CoPs) features, including Electrical Safety and Fire Protection, and the Forum dropdown, including Pressure Safety and others. Registration required. Some CoPs also have EFCOG presence.*
OSTI.gov	The primary search tool for DOE-funded science, technology, and engineering R&D results and the organizational hub for information about the DOE Office of Scientific and Technical Information.
Other Hazard Controls (OHC)	Preventive or mitigative controls that do not rise to the level of SC or SS but still enhance the safety of the facility. These controls are identified in the hazard evaluation table, but not explicitly credited with a SC/SS designation as identified in the DSA. Such controls are maintained in accordance with safety management programs. Other hazard controls are expected to be designed to the applicable industry code/standard for the given type of non-safety SSC. (From DOE-STD-3009-2014) [P341; AP-341-502] *See graphic that follows the "Z" definitions.*
Otherwise-Acquired Software	Software that was not acquired, developed and/or maintained in accordance with an NQA-1 quality assurance program. This software may be from entities internal to LANL entities external to LANL (e.g., other DOE sites, U.S. EPA, etc.) This includes existing software. [ESM Ch. 21, SOFT-GEN]
Owners Building Inspector(s), OBI	A LANL or LANL-employed construction inspector (ESM Ch. 16 IBC-IP). *Scope includes building (ESM Ch. 16) and piping (ESM Ch. 17) code inspections. Special Inspectors (SI, IBC Ch. 17) are a subset of OBI. See also Qualified Inspection Agency for other types.*
P	TOP
Parent Documents	Documents with unique names and filed as unique documents in records management software. Examples: calculations, Design Change Forms (DCFs), and System Design Descriptions (SDDs). Also known as Stand-alone Documents. [AP-341-402]

Term	Definition
Part	Items from which a component or equipment is assembled (e.g., resistors, capacitors, wires, embedded software, transistors, modules, O-rings, springs, bearings, gaskets, belts, bolting, seals). Parts are not assigned unique identification tag in LANL CMMS. They are identified by manufacturer/vendor assigned part number. [AP-341-502, AP-341-703]
Partial Occupancy	LBO approval to utilize part of a system or structure. [ESM Ch. 16 IBC-GEN FM05]
Passive SSC	An SSC that does not change state to perform its safety function; a non-moving, unpowered, design feature (as opposed to active). [AP-341-901] *Examples: Confinement and containment barriers such as walls, barriers, piping, vessels.*
Pathway	The vertical and horizontal route of the telecommunications cable. [ESM Ch. 19, D60, G50]
Peer	A person having technical expertise in the subject matter to be reviewed to a degree at least equivalent to that needed for the original work. [AP-341-513]
Peer Review	1. An in-depth critique of assumptions, calculations, extrapolations, alternate interpretations, methodology, and acceptance criteria employed, and of conclusions drawn in the original work. Peer reviews confirm the adequacy of work. [AP-341-513] 2. A formal review process in which an external party (independent from the project) will review the methodology, results, and process by which a design is developed. [ESM Ch. 5]
Pending Changes	There are two types of pending changes posted against facility Technical Baseline documents: • Yet to be Implemented Changes: design changes that are either in the design development phase, or the design has been approved but not yet implemented, or the implementation is in progress. • Implemented Changes: changes that have been implemented, tested, and accepted by Operations. [AP-341-402]
Performance Baseline	The cost and schedule baseline established for a project [ESM Ch. 20]
Performance Category	Natural phenomenon hazard rating used at LANL circa 1993–2003, first defined by DOE-STD-1021-93. *ESM Ch. 5 Section I includes a sometimes-conservative crosswalk from old PC category to current ones. See also ESM Ch. 16 PPD Instructions regarding historical building and SSC PC data.*

Term	Definition
Performance Criteria	Criteria imposed on the SSC so it can meet functional requirement(s) and, thereby, satisfy its safety function. Characterize the specific operational responses and capabilities necessary to meet functional requirements. Performance criteria are defined and documented in facility safety analysis documents. [AP-341-607, AP-341-610]
Performance Function	A function that is required to satisfy item performance. [ESM Ch. 21, SOFT-GEN]
Performance Function Code	The computer program language (code) that is required to satisfy item performance. The performance function code is only those lines of code that affect the performance function. [ESM Ch. 21, SOFT-GEN]
Performance Requirements	Quantified statements that define how well or to what degree functions need performing. There are three types of performance requirements that should always be considered for each function (not all three necessarily apply to each function): • Output magnitude or capacity (i.e., how much) • Process throughput (i.e., number of products per time) • Output product characteristics (i.e., parameter limits) Performance requirements are directly measurable (e.g., pressure, temperature, voltage, transfer frequency, miles per hour, gallons per minute, purity, number of containers stored, etc.) and provide specific parameters that the design must meet. [AP-341-602]
Performance Testing	Performance tests are conducted to verify performance of entire systems and multiple systems against a defined set of requirements and parameters. Examples of systems which typically require performance tests are HVAC systems, process systems, critical capacity mechanical equipment and integrated operation of systems. [ESM Ch. 15]
Permitting Authority	The LANL Building Official is the NNSA-delegated building code authority; for user understanding, however, Permitting Authority is used for all project permitting (release), be that either the LBO (via the LBO Design Package Reviewer [LBO-DPR]) or the FDAR (under the annual permit provision) depending on the risk level (e.g., per ESM Ch. 16 Table IBC-GEN-3). Permitting Authority signature ensures complete package, acceptable quality, code SME concurrence, and other IBC and ESM expectations.
Periodic Review	A planned review to assess a document's continued necessity, usability, and accuracy (e.g., document references, organizational references, etc.) [AP-341-401]
Permits Requirements Identification (PRID)	Project planning tool to identify potential project permits, requirements, and facilitate SME reviews for the successful completion of a project. *Part of Integrated Review Tool/IRT)* [P351; ESM Ch. 1 Z10; Ch. 16 IBC-GEN]

Term	Definition
Plant System Engineer (PSE)	An engineer responsible for one or more systems. *Some systems may be with a nuclear facility (e.g., plutonium facility's Essential Balance of Plant group); however, most support non-nuclear ones. Cognizant System Engineer (CSE) and Process Engineer (PrE) is similar but has increased training and qualification. Systems Engineer(ing)/SE is very different.*
Point-of-Contact (POC)	See Engineering Standards Discipline POC.
Post-Installation Testing (PIT)	Activities conducted after installation of a commercial grade item to verify required critical characteristics prior to placement in operation. [AP-341-703]
Post-Modification/Post-Maintenance Testing (PMT)	Validates that the system or component performs as intended and operates within the design requirements after the change is installed (or maintenance) and before turnover to operations [DOE-STD-1073; AP-341-801; ESM Ch. 15]
Post Weld Heat Treatment (PWHT)	The process of removing or reducing residual stresses in welds using heat applied in accordance with an approved procedure. [ESM Ch. 13, Vol. 1, 1-99]
Potential Inadequacy of the Documented Safety Analysis (PISA)	A condition in which the safety basis may be inadequate or the physical condition may not be accurate because the documented safety analysis may not match the current physical configuration of the facility, or the safety analysis may be inappropriate, inadequate, or contain errors [SBP-112-5-R6; AP-341-802]
Powerpedia	A non-public, employee-created encyclopedia of information about DOE. It uses the same technology that powers Wikipedia (Mediawiki) and can be accessed and edited by any DOE employee or contractor. Powerpedia's mission is to help employees share information on topics while improving communication and coordination between DOE organizations. *Registration required. Useful info includes some DOE organization charts.*
Preconceptual Design Phase	The phase of system/facility acquisition that examines alternate approaches to satisfying a mission need, establishes high-level requirements, confirms feasible alternatives exist, and selects the preferred alternative approach. Results are used to decide to pursue conceptual design. [ESM Ch. 20]
Preliminary Design Phase	The phase of system/facility acquisition that advances the conceptual design by fully specifying the facilities and systems that will be design and constructed to meet the mission need. It details the system and facility-level design by identifying the required components and structures. This phase provides sufficient detail to enable procurement of long-lead items. (Begins when Critical Decision 1 [CD-1] is received, ref. DOE O 413.3B] [ESM Ch. 20] Project design phase where design concepts are developed into facility layouts, P&IDs, electrical one-lines, and equipment selection. (Paraphrased from DOE-STD-1189 and DOE O 413.3B). The end of preliminary design is marked by CD-2 approval for large projects and is roughly equivalent to 60% design completion for smaller projects. [AP-341-620] *Also referred to as Title I.*
Preliminary Project Determination (PPD)	LANL Building Code Program process/form for establishing related design criteria prior to project going underway. [ESM Ch. 16 IBC-GEN; Form 1]

Term	Definition
Pre-qualified Welding Procedures	A written welding procedure with the ranges taken from a set of pre-qualified variables as defined in the AWS codes. These procedures shall be written by the LANL WPA and can be authorized for use without further procedure qualification testing. [ESM Ch. 13, Vol. 1, 1-99]
Pressure Safety	The program to reduce injuries, equipment damage, and lost productivity due to pressurized (or vacuum) system failure to meet 10CFR851. This includes design and construction requirements (ESM Ch. 17, with definitions in Attachment GEN-1*, Definitions and Acronyms)* and an administrative program (P101-34, P101-5, and definitions therein).
Preventive Maintenance Instruction (PMI)	Procedures that implement the Operations and Maintenance (O&M) Criteria. *Posted two ways: with each O&M here and numerically here.*
Primary Function	The driving mission of the project itself. It provides a link between the higher order function and the project. [AP-341-601]
Priority Documents	Technical documents that are required to perform Technical Safety Requirements (TSRs) in Hazard Category 2 or 3 (HC-2 or HC-3) nuclear facilities or Operational Safety Requirements (OSRs) in accelerator facilities and high and moderate hazard nonnuclear facilities. [AP-341-405, ESM Ch. 1, Z10; CAD Standards Manual, Section 100 (VAR-10642)] *LANL's renaming of older editions of DOE-STD-1073's category of Essential in the late 1990's.*
Priority Drawings	The most common form of Priority document; *see above.*
Procedure Qualification Records (PQR)	A record of welding variables used to produce an acceptable test weldment and the results of the tests conducted on the weldment to qualify a welding procedure specification. [ESM Ch. 13, Vol. 1, 1-99]
Process	Manufacturing, process, or production equipment of tenant organizations, as distinguished from utilities or building services equipment. [ESM Ch. 16 IBC-GEN]
Process and Automation (P&A)	Former team of I&C SMEs within ES, now decentralized in ES project delivery groups. [ESM Ch. 8 D3060.90]
Process Engineer (PrE)	Programmatic system engineer responsible for one or more systems of a programmatic process that is typically a long-life system with formal configuration control (not rapidly changing R&D experimentation; e.g., by a Principal Investigator) and, when nuclear safety is involved, subject to PD340 and the P341–3 series including P343 for training and qualification. *The PrE supports and acts as the owner of their assigned system which may interface with an Engineered Safety Feature, and acts as the responsible Engineer for all CoE-related documentation and activities involving their assigned system rated at the ML3 (not a VSS) or the ML4 level. PrEs have been determined to be "Technical Staff" positions as per DOE Order 426.2, having increased training and qualification versus a Plant System Engineer. [CSE-QS-004-R3]*

Term	Definition
Procurement Engineer (PtE)	Ensures the proper acquisition of SSCs and services by specifying and implementing the appropriate technical and quality requirements in the procurement process. Interfaces with the Design Engineer, Project/System Engineer, Project/Facility Manager, Quality Assurance Engineer, and Procurement Specialist. [P341]. *Preferred abbreviation is PtE. Member of Procurement Engineering (PIE-3) group, tasked to produce accurate, technically strong, and compliant procurement packages, and solutions for both nuclear and non-nuclear (commercial) equipment and materials. Additionally, the group develops Commercial Grade Dedication plans and packages, both for onsite dedication, and in support of CGD that occurs during fabrication subcontracts with nuclear suppliers.* *There is an EFCOG Community of Practice for PtEs under Safety WG's QA Subgroup.*
Procurement Quality	Application of quality approaches to acquisition. *See P 841-1, Quality Procurements.*
Procurement Quality Subject Matter Expert (P-QSME)	A person who has demonstrated knowledge of procurement quality functions and who has been appropriately trained and indoctrinated to perform those functions [P841-1, *Quality Procurements*]
Procurement Technical Subject Matter Expert (P-TSME)	A person (e.g., Responsible Engineer, Design Engineer, System Engineer, Process Engineer, Principal Investigator, Quality Engineer, etc.) who has demonstrated competence and expertise in a specific process, service, or item and is authorized by the IQPA-IQ Group Leader to determine technical, performance and quality adequacy, through specifications, codes, and/or standards for procurements. [P841-1, *Quality Procurements*]
Professional Engineer (P.E.)	A design professional registered in one or more states. [ESM Ch. 1 Z10] *A P.E.'s application their stamp to a design output is called sealing. See also Engineer of Record and Design Professional in Responsible Charge.*
Programmatic	1. A synonym for Personal Property and Programmatic Equipment. PP&PE is equipment used purely for programmatic purposes, such as reactors, accelerator machinery, chemical processing lines, lasers, computers, machine tools, etc., and the support equipment dedicated to the programmatic purpose. This property/equipment is also referred to as organizational, research, production, operating or process and was formerly known as Class B. [former DOE Order 4330.4B]. 2. Work or equipment that is tenant, R&D, or process – not facility, utility, infrastructure, or environmental program related. [ESM Ch. 1, Z10; Ch. 8 D3060.90; Ch. 16, IBC-GEN]
Program Requirements Document (PRD)	[For a large project,] the document that translates the "need" in the Mission Need Statement into initial top-level requirements addressing such concerns as performance, supportability, physical and functional integration, human integration, security, test and evaluation, implementation and transition, quality assurance and configuration management. [AP-350-101 r1]

Term	Definition
Program Strategy and Execution–Information Management (PSE-IM)	LANL organization supporting document control and records management (formerly SI-DCRM). *RM webpage here.*
Project	1. An undertaking that encompasses a set of tasks or activities having a definable starting point and well-defined objectives. Usually, each task has a planned completion date (due date) and assigned resources. 2. A set of related activities needed to produce specific products or services to meet a customer's requirement. In contrast to programs, projects are finite (have a definite beginning, middle, and end). *LANL projects are typically a subset of, and funded by, a LANL program.* 3. In the Engineering Standards, ANY task or activity involving the installation, modification, or permanent removal of an SSC at LANL managed formally or otherwise. Includes related fabrication, construction, procurement — and maintenance activities where required — and may not be a formal project or subproject, nor subject to Project Management's SD350 and related procedures. "Task" means the same. [ESM Ch. 1, Z10; Ch. 16 IBC-GEN]
Project Phases	Per SD350 r12, for those not over $50M: • Phase 1 – Initiation (Conceptual Design) • Phase 2 – Definition (Preliminary/Final Design) • Phase 3 – Execution (Construction/Installation) • Phase 4 – Startup, Testing, and Turnover • Phase 5 – Closeout For those over $50M: • Phase 1 – Initiation • Phase 2 – Definition (Conceptual Design) • Phase 3 – Execution -Design (Preliminary and Final Design) • Phase 4 – Execution -Construction • Phase 5 – Execution -Startup, Testing, and Turnover to Operations • Phase 6 – Closeout *See also Critical Decisions herein such project milestones.*
Project Engineer (PE)	Individual assigned by Engineering Management as the single point of contact for design activities. [AP-341-610, ESM Ch. 1, Z10] *Note, PE may mean professional engineer in a design output context, but P.E. may be more common for that.*
Project Equipment List (PEL)	An equipment/component listing the project delivers as a turnover document (xls). LANL finalizes and uploads the PEL to become the Master Equipment List (MEL) in CMMS for the operating facility. [ESM Ch. 1 Z10]
Project Lead	Project manager (assigned by organization), project leader (assigned by PM Division) or other designated individual responsible for the management and overall design effort of the project. [ESM Ch. 11]

Term	Definition
Project Management	General term for activities related to the execution of projects. *In CoE documents, this normally means the LANL functional project manager overseeing the scope, schedule, and budget. LANL has many organizations dedicated to this (ALDICP, others); the Project Management Resource Center (PMRC) Procedures, Training & Development Project/Program (PM-PTD) website has selected SD350-series FSD, WI, and other documents (a subset of those in EDRMS, with some links to there). Latest DOE PM directives may be here. The DOE-OPM Lexicon of Terms also exists for that scope.*
Project Record Document (PRD)	Final (e.g., closeout) documents that incorporate all field changes. "As-builts" are generally a small, critical subset of these. PRDs are QA records (while Issued-for-Construction precursors are not), so the signature(s) on PRDs are attesting that it reflects the installed condition to the best of their knowledge and thus fulfill the requirement for "authentication" (see that definition) before EDRMS storage. [based on CSI MasterFormat 01 7839 and DPIC's 1999 Contract Guide (risk management handbook for AEs), pgs III-23 thru 25; ESM Ch. 1 Z10]
Q	TOP
Qualification, Personnel	The characteristics or abilities gained through education, training, or experience, as measured against established requirements, such as standards or tests that qualify an individual to perform a required function. [NQA-1, Pt 1, 400]
Qualification Standard (QS)	The formal documentation of qualification or certification requirements issued to an individual assigned to the position. Information in the QS is extracted from the approved Qualification Program developed for that position. [adapted from LANL Definition of Terms; P781-1; P343]
Qualification Tests	Testing that demonstrates adequate performance of items under conditions that simulate the most adverse design conditions. (ASME NQA-1) [AP-341-620]
Qualified Inspection Agency (or Agent), QIA	LANL Qualified Inspection Agency (or Agent) acceptable to the LANL Building Official. This is most often the ES Chief Inspector's Owners Building Inspectors (OBIs) which includes the ASME Owner's Inspectors but also includes any others when approved by the Chief such as third-party inspectors, QC inspectors (*in IQPA*), or MSS-MP SMEs (e.g., *boilers, elevators)*. It also includes these organizations that maintain a separate qualification program accepted by the LBO: (1) for electrical safety/NEC*, the* ES&H OSH-ISH EIT Chief Electrical Inspector's Office/Team (EIT), (2) Fire Protection Office, (3) per ESM Ch. 13 Vol. 6 and in the associated database, CWIs approved by the Welding Program Administrator and NDE examiners approved by the Responsible Level III. [ESM Ch. 16, IBC-GEN; IBC-IP]. *See also definitions of Inspection, Inspector, LANL Inspector, and Owners Building Inspector.*

Term	Definition
Quality Assurance (QA)	1. All those actions that provide confidence that quality is achieved. [10 CFR 830; LMS 01 4000]. 2. Measurable systematic actions to assure confidence that the implementation of planned activities result in meeting objectives, goals, and contract documents. [ICC's Accreditation Criteria and Special Inspection Manual] 3. All the planned and systematic activities implemented within the quality system that can be demonstrated to provide confidence that a product or service will fulfill requirements for quality. [ASQ.org] *In LANL construction work, this is the overall quality approach that normally includes QC (see below) with QA by LANL or LANL (e.g., LBO)-approved third party and being a second, overlayed, higher level of verification sufficiently independent of work organization to verify work/QC is performed properly. Such QA has two parts: (1) prior to work, LANL reviews the constructor's quality program to ensure acceptability (e.g., might require editing of QC forms described below to add/delete data capture, steps, or checks), and (2) during or after work, inspectors perform checks on items and QC forms in the field (during work being a Hold or Witness Point).*
Quality Assurance Subject Matter Expert (QA SME)	A person who performs the quality assurance role defined in P341 Facility Engineering Processes Manual and administrative procedures (e.g., AP-341-513, AP-341-601, AP-341-602, AP-341-610, AP-341-703). *When role is in the procurement process, see Procurement Quality SME (P-QSME).*
Quality Control (QC)	The act of examination, testing, or measurement that verifies processes and services, or documents conform to specified criteria. [ICC's Accreditation Criteria and Special Inspection Manual; LMS 01 4000; ESM Ch. 16 IBC-IP Att. I TIP]] *In LANL construction work, QC is the constructor's responsibility. It is the in-process or soon-after, first level of verification of quality that's not necessarily financially independent of the work-performing entity. The constructor will have a quality program (normally termed Quality Assurance or Quality Control). For QC, each equipment item type and important installation activity should have an individualized QC sheet (e.g., anchor install, cable pulling). A QC person (there might be one per 25 workers) checks such installations and watches such actions, completes a sheet for each, signs, and dates. The sheets are reviewable by QA personnel and become a part of the project records.* *In ASME code work, such QC is termed Examination. With structural steel fab, both QC and QA is normally termed Inspection. See also Examination, Inspection, and QA usage note above.*
Quality Inspection Plans	Indicates examinations or activities that are designated as witness and hold points during a modification implementation. Specifies examination method, acceptance criteria, and testing procedures. *Part of the Design Change Form. Quality inspection requirements required by ESM Chapter 16.* [AP-341-517] *Sometimes is a TIP, other times a PMT, ref. Ch. 16 IBC-IP Att. J.*

Term	Definition
Quality Level (QL)	Grading structure which is used to establish the level of rigor used to implement quality assurance controls for the procurement of items and/or services. [P841-1] *Per P841-1 r4 Table 1, QL-1 is Nuclear Quality, QL-2 is Enhanced Quality, and QL-3 is Standard Quality. Applies to purchases by LANL, not its subcontractors.*
R	TOP
Readiness Assessment (RA)	An assessment to determine a facility's readiness to startup or restart when an ORR is not required or when a contractor's standard procedures for startup are not judged by the contractor or DOE management to provide an adequate verification of readiness. [DOE 413.3B]. *This is the less rigorous of two DOE/NNSA approaches defined by DOE O 425.1D — the other being an Operational Readiness Review (ORR, called FORR by PD115). Both are preceded by a Contractor Readiness Review step (see that term)*
Read-only SSC software	SSC software where the computer program cannot be changed other than through replacement of the computer program and/or the associated SSC. Note: Read-only software includes software where limits and/or set points can be configured (e.g., via keypad entries) without modifying the computer program (code). [ESM Ch. 21, SOFT-GEN]
Real Property and Installed Equipment	See Facility
Reasonable Assurance	In the context of commercial grade item acceptance, reasonable assurance is an engineering determination premised upon a justifiable level of confidence based on objective and measurable facts, actions, or observations from which adequacy of the item for its intended purpose can be inferred. (DOE-HDBK-1230-2019) [AP-341-703]

Term	Definition
Records	In accordance with 44 U.S.C. 3301, *Definition of Records,* records include all books, papers, maps, photographs, machine-readable materials, or other documentary materials, regardless of physical form or characteristics, made or received by an agency of the United States government under federal law or in connection with the transaction of public business and preserved or appropriate for preservation by that agency or its legitimate successor as evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the government or because of the informational value of data in them. ***Note:*** At the Laboratory, records include information—regardless of medium or characteristics— created or received in connection with the transaction of Laboratory programs and operations, and preserved as evidence of policies, decisions, procedures, and operations because of their informational and evidential value. Examples include, but are not limited to, official correspondence and memoranda (including e-mail); LANL-produced or -controlled publications (such as Los Alamos Unlimited Release [LA-UR] documents); project plans and reports; technical reports; calculations; as-built specifications; completed Laboratory forms; project-acceptance reports; test/inspection reports; and stack emission filter raw data. NQA-1 QA Records—Consist of two categories: Lifetime and Nonpermanent. Lifetime QA Records meet one of the following criteria: 1) records that would be of significant value in demonstrating capability for safe operation; 2) records that would be of significant value in maintaining, reworking, repairing, replacing, or modifying an item; 3) records that would be of significant value in determining the cause of an accident or malfunction of an item; or 4) records that provide required baseline data for in-service inspections. Lifetime Records must be retained for the life of the item. Nonpermanent QA Records provide evidence that an activity was performed in accordance with applicable requirements, but do not meet the criteria for Lifetime Records. Nonpermanent Records must be maintained for the identified retention period. [P1020-1, r14]
Redundant Path	An installation of secondary or alternate path or system so that if one system goes down, the connection between other systems will not be broken [ESM Ch. 19, G50]
Regression Testing	Selective retesting to detect errors introduced during modification of the computer program or to verify that the modified computer program still meets its specified requirements. [ESM Ch. 21, SOFT-GEN]

Term	Definition
Repair	1. In all contexts, the process of restoring a nonconforming characteristic to a condition such that the capability of an item to function reliably and safely is unimpaired, even though that item still does not conform to the original requirement. [NQA-1/P330-6] 2. In the context of existing-SSC IEBC categories, the restoration to good or sound condition of any part of an existing building for the purpose of its maintenance. Repair includes the patching or restoration or replacement of damaged materials, elements, equipment, or fixtures for the purpose of maintaining such components in good or sound condition with respect to existing loads or performance requirements. Limited to work on the item and does not include complete or substantial replacement (a majority of the original remains) or other new work. Repairs shall not include the cutting away of any wall, partition, or portion thereof, the removal or cutting of any structural beam or load-bearing support, or the removal or change of any required means of egress or rearrangement of parts of a structure affecting the egress requirements; nor shall ordinary repairs include addition to, alteration of, replacement, or relocation of any standpipe, water supply, sewer, drainage, drain leader, gas, soil, waste, vent, or similar piping, electric wiring, or mechanical or other work affecting public health or general safety. *Must follow IEBC Ch. 4. Work on non-damaged components that is necessary for the required repair of damaged components shall be considered part of the repair and shall generally not be subject to the other classification requirements (must describe in SOW; subject to LBO concurrence).* [adaptation of IEBC; ESM Ch. 16 IBC-GEN PPD FM01.]
Request for Impact (RFI)	LANL Prime Contracts process for Management Systems Sponsors and Leads to perform an impact assessment on NA-LA proposed new/revised directives per SD310.
Request for Information (RFI)	A document that presents a technical question initiated by the subcontractor when: • The Subcontractor is unable to understand the technical document (e.g., scope, specification, drawings, or data). • Discovers or perceives a conflict, ambiguity, error, or omission in or among the technical documents. [STR AP-850-300 r6] *See also Engineering Request for Information (ERFI) for LANL-internal corollary.*
Request for Proposal (RFP)	A solicitation to bidders that includes the technical scope of work. [ESM Ch. 1 Z10]
Requirements	Expectations that the facility, system, or component must meet for successful performance of its mission. Requirements should be traceable, measurable, and testable. [AP-341-602]
Requirements and Criteria Documents (RCD)	Requirements and Criteria Document. Establishes design requirements and maintains the technical baseline for a project. Required for line item, GPP, and complex projects. Will be based on FRD, if present. [AP-341-602, ESM Ch. 1, Z10]
Requirements Verification Matrix (RVM)	A document that is used to identify, plan and track completion of V&V activities, by requirement. The RVM is typically developed for each system using the requirements in the system specification. [ESM Ch. 20]

Term	Definition
Research and Development (R&D)	Any creative systematic activity undertaken in order to increase the stock of knowledge, and the use of this knowledge to devise new applications. (SD601).
Research and Development Engineering	Experimental or creative engineering work effort that contributes to the scientific or engineering body of knowledge or results in a tangible product meeting a mission need. Includes both engineering research and technology development, and engineering activities performed in support of R&D. [PD370, *Conduct of Engineering for Research and Development (R&D)]*
Responsible Engineer (RE)	Assigned by Engineering Management. The following may be assigned the role of RE: Design Engineer, Plant System Engineer, Cognizant System Engineer, Process Engineer, Project Engineer, External Design Agency Engineer. [AP-341-517]
Responsible Line Manager (RLM)	Manager role assigned duties, authorities, and accountability by one or more policy documents.
Risk Category (RC)	A categorization of buildings and *other structures* for determination of *flood*, wind, snow, ice, and earthquake *loads* based on the risk associated with unacceptable performance. [2021 IBC; ESM Ch. 5, Section I]. *One of four survivability grading levels for non-nuclear structures defined by IBC Chapter 16 Table 1604.5. LANL began using around 2004 with IBC adoption, replacing PC for new non-nuclear NPH determinations. See also Performance Category.*
Risk Significant (RS) software	As determined using Form 2033, software that is, or will be used for any of the purposes that safety software is used for, only such purposes are in or for an accelerator, live-fire range, biological hazard facility, explosive hazard facility, or a moderate- or high- hazard chemical facility. Risk significant also includes software whose failure would prevent LANL from performing a Mission Essential Function (MEF). [P1040r13; ESM Ch. 21, SOFT-GEN]
Risk-Based Graded Approach	Involves grading based on consideration of consequence of SSC failure and its probability of failure to perform assigned function(s). Provides the basis for establishing the degree of technical and administrative oversight and control required to ensure that the SSC can meet its required function(s) for protection of the public, the worker, the environment, classified assets, or its ability to support LANL mission commitments. [P341]
S	TOP
Safety and Hazard Analysis Software (SHADS)	Software that is used to classify, design, or analyze nuclear facilities. This software is not part of an SSC but helps to ensure the proper accident or hazards analysis of nuclear facilities or an SSC that performs a safety function. (DOE O 414.1D and Guide) [P1040, ESM Ch. 21, AP-341-703]
Safety Class (SC) SSCs	Structures, systems, and components, including portions of process systems, including portions of process systems whose preventative or mitigative function is necessary to limit radioactive hazardous material exposure to the public, as determined from the safety analyses. (From 10 CFR 830.3 and SBP 114-2) [AP-341-502, ESM Ch. 1, Z10, ESM Ch. 8 D3060.90]

Term	Definition
Safety Evaluation Report (SER)	The report prepared by DOE to document: (1) The sufficiency of the documented safety analysis for a Hazard Category 1, 2, or 3 DOE nuclear facility; (2) The extent to which a contractor has satisfied the requirements of Subpart B of this part; and (3) The basis for approval by DOE of the safety basis for the facility, including any conditions for approval. [10CFR830.3]
Safety Function	The performance of an item necessary to achieve safe, reliable, and effective utilization in a nuclear context. Safety functions are defined and documented in facility safety analysis documents. [AP-341-607, AP-341-610] *Function is also defined more fully here.*
Safety Management and Administrative Controls Software (SMACS)	Software that performs a hazard control function in support of nuclear facility or radiological safety management programs or technical safety requirements or other software that performs a control function necessary to provide adequate protection from nuclear facility or radiological hazards. This software supports eliminating, limiting, or mitigating nuclear hazards to workers, the public, or the environment as addressed in 10 CFR Parts 830 and 835, the DEAR Integrated Safety Management System clause, and 48 CFR 970-5223.1. (DOE O 414.1D) [AP-341-703]
Safety Management Program Owner (SMPO)	LANL has assigned individuals as SMPOs for each of the Laboratory Safety Management Programs. An SMPO is the technical authority on their program's management and issues relating to national codes and standards, DOE Orders, and Engineering Standards. The LANL Site Chief Engineer FDA is the Laboratory SMPO for facility engineering, facility configuration management, and pressure safety. [PD340 r8; P342] *Term from nuclear safety basis (DSA) for managers of all the programs that help keep a facility within its authorization basis.*
Safety Related Item	Item that has been designated Management Level (ML) 1 or 2 in Hazard Category 2 and 3 nuclear facilities. [AP-341-607]
Safety Significant Instrumented System (SIS)	An SS system or 29 CFR 1910.119 hazardous process independent protection layer that requires instrumentation, logic devices and final control elements to monitor and detect a ML-2/SS event, and which will result in automatic or operator action that will bring the facility or process system to a safe state. [ESM Ch. 8 D3060.90]
Safety Significant (SS) SSCs	Those structures, systems, and components which are not designated as safety-class structures, systems, and components, but whose preventive or mitigative function is a major contributor to defense-in-depth and/or worker safety, as determined from safety analyses. Support systems have the potential to be Safety Significant as well. (From 10 CFR 830.3 and SBP 114-2) [AP-341-502, ESM Ch. 1, Z10]
Safety Software	Software that includes any of the following: SSS, SHADS, or SMACS. Both SSC software and non-SSC software can be safety software. [P1040; Form 2033; ESM Ch. 21, SOFT-GEN]

Term	Definition
Safety System Software	Software for a nuclear facility that performs a safety function as part of an SSC and is cited in either a DOE-approved documented safety analysis, or an approved hazard analysis per DOE P450.4A and 48 CFR 970-5223.1. [AP-341-607, AP-341-703]
Safety-Related	A term meaning safety class, safety significant, and those ML-1 and ML-2 SSCs that could potentially impact public or worker safety or the environment in the same way as safety class or safety significant systems respectively. [ESM Ch. 8 D3060.90]
Sampling Plan	A plan developed to determine the definition of appropriate lot and sample size to achieve reasonable assurance that the sample size chosen provides an adequate representation of the item(s) quality. (DOE-HDBK-1230-2019) [AP-341-703]
Secondary Function(s)	Functions that are precursor requirements for the Primary Function. [AP-341-601]
Server Equipment Room	An equipment room that houses mainly computer servers. In information technology circles, the term "server equipment room" is generally used for groups of servers housed in data centers. Server equipment rooms may also house headless systems that are controlled remotely via keyboard/video/mouse (KVM) devices, Virtual Network Computing (VNC), or other terminal emulation software to the desktop. [ESM Ch. 19, D60]
Service	The performance of activities such as design, fabrication, inspection, nondestructive examination, repair, or installation. (ASME NQA-1) [AP-341-703] *In a building electrical supply, service entrance is a physical place.*
Service Innovation-Document Control Records Management (SI-DCRM)	Former name of LANL organization supporting these functions, now Program Strategy and Execution–Information Management (PSE-IM). *RM webpage here.*
Shall	Denotes a requirement (versus "should") [DOE O 6430.1A and DOE Std Style Guide]. "Must" denotes the same and is the preferred term in DOE orders and LANL policy documents [P311-1]. *("Will" is sometimes used to convey future LANL actions, often in specifications).*
Shall Consider	Requires that an objective assessment be performed to determine to what extent the specific factor, criterion, guideline, standard, etc., will be incorporated into or satisfied by the design. The results and basis of this assessment shall be documented. Such documentation shall be retrievable and can be in the form of engineering studies, meeting minutes, reports, internal memoranda, etc. [archived DOE O 6430.1A 0101-3.2]. Such documentation shall be submitted to LANL for approval where directed by the ESM or upon request.

Term	Definition
Shop Drawing	A detailed drawing directing fabrication and/or installation. *Term is generally limited to the detailed implementation of engineering design drawings (sometimes preliminary in nature) and/or calculations. As such, shop drawings are generally not engineering outputs necessitating professional engineer sealing, but when an engineering output they must be sealed. Search "sealing" in ESM Ch. 1 Z10.*
Should	Denotes a recommended action or expectation. [DOE O 426.2, PD115]
Simple and Easily Understood (Non-SSC) Software	Software that satisfies the following criteria: a. The software is used in the design of SSCs. b. The results of the computer program can be easily confirmed through hand calculations. c. A person technically qualified in the subject can review and understand the program and the supporting calculations; and, d. The software is individually verified with each use (e.g., calculation). [AP-341-605, ESM Ch. 21, SOFT-GEN]
Software	Computer programs and associated documentation and data pertaining to [needed for] the operation of a computer system. [ESM Ch. 21, SOFT-GEN]
Software Approval/ Approved for Use (SWAU)	An approval that constitutes that the software requirements have been satisfied (including installation and operating instructions), and the software is ready to be used in the intended operating environment. [ESM Ch. 21, SOFT-GEN]
Software Change	A software change is an addition, deletion and/or modification to software. [ESM Ch. 21, SOFT-GEN]
Software Coordinator	Individual(s), designated by division management, providing coordinating and/or administrative functions in support of chapter compliance (e.g., inventory and associated reporting). [ESM Ch. 21, SOFT-GEN]
Software Design Requirements	A requirement that impacts or constrains the design of a software system or software system component. [ESM Ch. 21, SOFT-GEN]
Software Design Verification	The process of determining if the product of the software design activity fulfills the software design requirements. [ESM Ch. 21, SOFT-GEN]
Software Engineering	a. the application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software. b. the study of approaches as in (a) [ESM Ch. 21, SOFT-GEN]

Term	Definition
Software Engineering Elements	a. software acquisition method(s) for controlling the acquisition process for software and software services. b. software engineering method(s) used to manage the software lifecycle activities. c. application of standards, conventions, and other work practices that support the software life cycle. d. controls for support software used to develop, operate, and maintain computer programs. [ESM Ch. 21, SOFT-GEN]
Software Life Cycle	The period that begins when a software product is conceived and ends when the software is no longer available for use. The life cycle typically includes a concept phase, requirements phase, design phase, implementation phase, test phase, installation and checkout phase, operation, and maintenance phase, and, sometimes, retirement phase. These phases may overlap or be performed iteratively, depending on the software development approach used. [ESM Ch. 21, SOFT-GEN]
Software Owner (SO)	Responsibilities (performs or causes to be performed, see others in chapter): • Provides the software information and Form 2033, Software Grade Determination, and obtains review and concurrence of the form in accordance with this document. • Reviews and approves the software project planning documentation. • Owns the software and supports the SRLM in complying with the requirements of this document. • Prepares the approval for use documentation that describes the intended use and any associated limitations, access controls, etc., for using the software. [ESM Ch. 21, SOFT-GEN]
Software Point of Contact (SPOC)	That individual selected by division management to act as software owner for specific software or multiple non-SCC software programs. Ideally, it's the main or super-user of each program, but can be another user or even a single individual for a group or division. [ESM Ch. 21, SOFT-GEN]
Software Quality Assurance (SQA)	The process of ensuring software works as intended. [both terms defined elsewhere herein] *Those responsible for this must follow either P1040 (assistance from IQPA-IQ here) or ESM Chapter 21.*
Software Responsible Line Manager (SLRM)	The Software Owner's (SO's) responsible line manager. See ESM Ch. 21, SOFT-GEN for detailed role/responsibilities.
Software Test Case	A set of test inputs, execution conditions, and expected results developed for a particular objective, such as to exercise a particular program path or to verify compliance with a specific requirement. (ASME NQA-1) [AP-341-703]

Term	Definition
Software Test Plan	A document that describes the approach for testing a system or component. Typical contents identify the items to be tested, tasks to be performed, and responsibilities for the testing activities. (ASME NQA-1) [AP-341-703]
Software tool	A computer program used in the development, testing, analysis or maintenance of a program or its documentation. Examples include vendor-supplier configuration tools, conversion tables, comparators, cross-reference generators, compilers, CASE (Computer-Aided Design Software Engineering) tools, configuration and code management software, decompilers, disassemblers, editors, flowcharters, monitor test case generators, and timing analyzers. [ESM Ch. 21, SOFT-GEN]
Software User (SU)	Responsibilities: • Reports software errors and problems. • Uses software within software limitations and in accordance with this document. [ESM Ch. 21, SOFT-GEN]
Software User Responsible Line Manager (SURLM)	Responsibilities: • Supports completion of in-use tests in the operating environment. • Ensures software users and software user organization personnel managing or working to this document are adequately trained, and as required, qualified. [ESM Ch. 21, SOFT-GEN]
Special Inspection	A process of inspection, testing, and reporting by approved special inspectors and testing agencies to assure the LBO that the construction of critical elements, materials, and life safety systems is being performed in accordance with the approved construction documents and IBC Ch. 17. Described by the Statement of Special Inspections (see IBC-IP and its Att. B) [ESM Ch. 16 IBC-GEN]
Special Inspection Agency (SIA)	Organization providing special inspectors and managing their training and qualification in accordance with this Chapter. Also known as Inspection Agency. This is LANL or Subcontractors it may approve to perform this work [ESM Ch. 16 IBC-GEN]
Special Inspector (SI)	Individual who has specialized knowledge, training, experience, and certification(s) for one or more of the types of construction subject to special inspection [ESM Ch. 16 IBC-GEN, IBC-IP]
Special Process	A process, the results of which are highly dependent on the control of the process or the skill of the operators, or both, and in which the specified quality cannot be readily determined by inspection or test of the product. [NQA-1 2008/9; SD330; P330- 5]. *Examples include, but are not limited to, welding, heat-treating, nondestructive examination (NDE), application of critical coatings, and specialized cleaning and must be performed by qualified personnel using qualified procedures in accordance with specified requirements.*

Term	Definition
Specification	Written technical description of materials, equipment, systems, codes, standards, inspections, tests, and workmanship that complement the engineering drawing's graphical descriptions of scope, extent, and character of the work to be performed by the work provider. [AP-341-610; ESM Ch. 1 Z10 Att. F] *See ESM Z10 Att. F for requirements related to spec development.*
SpecLink	Brand of project specification development software. *Software sold by RIB (formerly by BSD). LANL CoE is implementing a cloud-based version (SLC) for use by ES Division and selected others with LANL and RIB masters in FY24.*
SSC Software	Software that controls and/or monitors system, structures, and components (SSCs) and is running and interacting with its environment in real time. SSC software may be safety or non-safety software. Examples: Building Automation Control System (BAS) software, process gas monitoring and control system software, fire alarm control panel (FACP) software, continuous air monitor (CAM) software, seismic switch software, and uninterrupted power supply (UPS) software. [ESM Ch. 21, SOFT-GEN]
Stand-alone Documents	Documents with unique names and filed as unique documents in records management software. Examples: calculations, Design Change Forms (DCFs), and System Design Descriptions (SDDs). Also known as Parent Documents. [AP-341-402]
Standard	A set of guidelines and criteria against which a product can be judged. (WBDG) [They] include the common and repeated use of rules, conditions, guidelines, or characteristics for products or related processes and production methods. [OMB, Circular A-119]. *Abbrev. STD used in DOE and LANL document numbers.*
Standard Drawings and Details	The example drawings and repeatable details (ST-) in the Engineering Standards collected as STD-342-400. [ESM Ch. 1, Z10]
Standard Welding Procedure Specifications (SWPS)	A welding procedure prepared as an industry standard, such as AWS, and adopted for use by a manufacturer or contractor as permitted by the applicable fabrication or construction code. [ESM Ch. 13, Vol. 1, 1-99]
Statement of Special Inspections (SSI)	An inspection plan exclusively for the requirements of IBC Chapter 17. *Template per ESM Chapter 16, IBC-IP, Att. B. [LMS 01 4000]*
Statement of Work (SOW)	A description of the outcome LANL wants delivered. *Becomes ASM Exhibit D. Labwide new templates here, and ES-Div SOW template for IDIQ AE task orders here.*
Structural Standards definitions not shown	*See ESM Chapter 5, Section I.*
Structural Temporary Modifications	Includes temporary shielding, temporary supports (piping, electrical, mechanical, etc.), temporary enclosures or load-bearing partitions, general civil-type bracing, or structural members, and if using an SSC for safety – temporary rigging, lifting, or arrangements. [AP-341-504]

Term	Definition
Structure	Structures are elements that provide support or enclosure such as building, freestanding tanks, platforms, towers, dikes, and stacks. For the purposes of management level determination, structures (if free standing) are treated as systems. [AP-341-502]
Structure, System, and Component (SSC)	Physical items designed, built, or installed to support the operation of the facility. A structure is an element or a collection of elements to provide support or enclosure such as a building, freestanding tank, basin, dike, or stack. A system is a collection of components assembled to perform a function such as piping; cable trays; conduits; or heating, ventilation, and air conditioning. A component is an item of equipment such as a pump, valve, or relay or an element of a larger array such as a length of pipe, elbow, or reducer. [DOE G 433.1-1A Chg 1]. *Thus, SSCs include facilities, not just equipment.* *This glossary includes alternate definitions for each term in SSC as well.*
Structures, Systems, and Components (SSCs) that are part of the safety basis	Safety-Class and Safety-Significant SSCs; other systems that perform important defense-in-depth functions; and equipment relied on for the safe operation and safe shutdown of the nuclear facility, and for maintaining the facility in a safe shutdown condition as documented in the safety basis (e.g., DSA). Support systems to Safety SSCs that are required for the safety functions are also included. [DOE G 433.1-1A Chg 1]
Sub-allocation	Reassignment of a portion of a requirement to another discipline or department. [ESM Ch. 20]
Subcontractor	The individual or legal entity that has entered into a subcontract with Triad for delivery of goods and/or services (P850). Subtier Subcontractors (Subtiers) work for Subcontractors. *Prime Subcontractor term may used occasionally, perhaps informally and internal at LANL, to reinforce responsibility of that entity (versus subtier responsibilities) but is not defined/preferred*. [ESM Ch. Z10] A legal entity that assumes by contract, obligations for delivery of a specified scope of work (product or service). As used herein, the term includes vendor, equipment vendor, fabricator, or constructor, and their sub-tier suppliers. [ESM Ch. 13, Vol. 1, 1-99] *Usage: See also Constructor and Contractor for additional information. ASM subcontracts use ALL CAPS for these terms and selected others. For self-perform construction, use of "01 1117, Work by Owner—Self Perform" in a specification effectively modifies Subcontract-related terms to LANL ones.*
Subcontractor Deviation Disposition Request (SDDR), Form 2178	Form/process to document, disposition, review, and reject or approve deviations to subcontract requirements (i.e., procurement of items or services). Also identifies LANL actions resulting from subcontractor deviation such as the identification of changes to LANL design documents, identification of changes to the project baseline, and SDDR closure requirements. *Because it is initiated by the vendor, it is web posted on the Standards Homepage as well as the Forms Center, plus the ASM external Supplier Forms/Exhibits page (updates sometimes lag). ALDPI LAP4 LIP projects should use 2178-LIP.*

Term	Definition
Subcontract Technical Representative (STR)	[LANL-appointed-person] to perform Technical Oversight of subcontracts, engages LANL SMEs as appropriate and provides feedback to [identified LANL stakeholders] with issues pertaining to subcontract performance. [P850] *There are four types of STR, including AdSTR (Administrative/low-consequence), HSTR (High-consequence), PSTR (Programmatic), and STR (all others).* *The STR has no authority to direct commercial or technical changes to the subcontract. When work is self-performed by LANL, take to mean the Superintendent(s).* [LMS 01 4216]
Subject Matter Expert (SME)	The person (e.g., Responsible Engineer, System Engineer, Process Engineer, Principal Investigator, Scientist, other Professional Specialist, etc.) who has demonstrated and documented competence and expertise in a specific process, service, or item and is authorized to determine technical or performance adequacy, specifications, codes, standards, and/or quality-related requirements. [clarification of P850 r9]. *ESM Ch. 16 Building Code Program has a graded approach on code design review with certain projects requiring a designated IBC/IEBC SME. ES Division has Lead SMEs that mentor and assist discipline-specific functions across group lines. The Standards Program has POCs for each discipline with some overlap with Lead SME people.*
Submittal	In a LANL procurement using Exhibit I, term includes commercial (e.g., bonds), quality (e.g., qualifications), and/or engineering (e.g., intended product choice, shop drawings) for project AE and/or LANL review. [Exhibit I]. *Of these, engineering submittals (many also concern quality) are generally required by the Specification, transmitted and processed per its Section 01 3300 Submittal Procedures, and summarized by 01 3300 Att. A log for Design Agency and project action or information. Submittal formats include written and/or graphic information and occasionally physical samples or maintenance materials. [ESM Ch. 1 Z10 Att. F; LMS 01 3300]* *Transmittal to LANL document control currently via project-dcrm@lanl.gov (default), aldpi-dcrm@lanl.gov (TA55/PIE), or another inbox).* *When Design Agency is not LANL, only a subset is reviewed by LANL (deferred design being one example). All submittals are project records. LANL review process is AP-341-720.*

Term	Definition
Submitted By (signature field or line on design outputs such as drawings and Statements of Special Inspection)	Design Agency signature affirming that the document was (1) coordinated among potentially affected disciplines and design entities and (2) required checks, verifications, and reviews were performed and review comments resolved per required processes. "Submitted by" may be same individual as Verifier. *AEs: Should be signed by the Design Professional in Responsible Charge or possibly another lead in the firm.* *LANL: Should be signed by the person with the best knowledge to affirm the above—the Responsible Engineer. For larger projects, this may be a Design Manager heading the effort, the lead or only Project Engineer, or the Group Leader. For very small tasks, it may be a system engineer. It could also be the FDAR (even when also "Accepting"). Note, AP output coversheets often don't include "Submitted By" — e.g., calcs (AP-341-605), drawings (608), and specs (610) — for those, follow the instructions for the blocks present.*
Substantial Completion	Substantial completion is a legally recognized point in time that allows the owner to take occupancy of the facility even though there is work yet to be completed and documentary, regulatory, and contractual closeout requirements yet to be met. [ESM Ch. 15] That stage in the progress of the work, as determined by the STR, when the work is complete and in accordance with the subcontract documents except only for completion of minor items which do not impair LANL's ability to occupy and fully utilize the work for its intended purpose (this may require limiting access by the Subcontractor to the site for security or safety reasons). *Any liquidated damages are calculated. A Certificate of Substantial Completion must not be issued until after a Certificate of Occupancy is issued by the LBO, all work is in place, all required agency approvals have been received, and all systems and equipment are fully functioning as verified by commissioning. Minor items (punch list) may include only patching, repair or replacement, and clean-up. Examples of acceptable punch list items include replacement of light switches, touch-up painting, repair of scratches on walls or floors, replacement of locks which do not function properly, replacement of filters or light bulbs, and other similar items.* [ESM Ch. 16 IBC-GEN FM05]

Term	Definition
Substitution	Changes in products, materials, equipment, and methods of construction from those required by the Subcontract Documents. There are two types: 1. Substitutions for Cause: Changes proposed by Subcontractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms. 2. Substitutions for Convenience: Changes proposed by Subcontractor or Contractor that are not required to meet other Project requirements but may offer advantage to either party. No Substitution: Phrase after a make/model in a design document to indicate that substitution requests almost certainly will not be accepted. [LMS 01 2500, *Substitution Procedures*] *Section 01 2500 must be followed for products not meeting a Specification's salient features or when other than the "No Substitution" product. Likewise, when the Drawings specify a proprietary product, thus the basis for design, constructor must treat that as "No Substitution" and either provide said product or submit alternative per 01 2500, since other products require A/E evaluation for comparable features and potential anchorage/bracing design impacts. [ESM Ch. 1 Z10 Att. F]*
Supplier	Any individual or organization who furnishes items or services in accordance with a procurement document. An all-inclusive term used in place of any of the following: vendor, seller, contractor, subcontractor, fabricator, consultant, and their sub-tier levels. (ASME NQA-1) [AP-341-703] *LANL procurements including the design or construction processes use "SUBCONTRACTOR" rather than supplier.*
Support Documents	Technical documents that are necessary for hazard controls during the performance of work activities within a Facility. These documents are used to support operational and maintenance activities such as SSC troubleshooting, system alignments, Lock Out / Tag Out (LO/TO) development and/or system walkdowns, and abnormal response procedures. [AP-341-405 (VAR-10642), ESM Ch. 1, Z10]
Support Services Subcontractor (SSS)	Obsolete term/concept for LANL captive maintenance and support services company (e.g., Johnson Controls, KSL) that was insourced years ago; take to mean LANL. *May still appear in a few ESM Ch. 13 documents.*
Support Software	Software or a program that aides in the development, maintenance, or use of other software or provides general application-independent capability (Ref. ISO/IEC/IEEE 24765). Support software includes software tools and system software [ESM Ch. 21, SOFT-GEN]
Sustainable Design	A building design (or design process) that aims to minimize the use of energy and resources to reduce environmental impact. *ESM Ch. 14 includes several additional, related definitions not in this glossary.*
System	An interrelated set of equipment and items that can perform a specified function or set of functions that fulfill a purpose. [AP-341-502]

Term	Definition
System Design Description (SDD)	Identifies the requirements associated with structures, systems, and components (SSCs); explains why those requirements exist (that is, provides the bases for the requirements); and describes the features of the system design provided to meet those requirements. [DOE-STD-3024] *Purpose is to collect system information to facilitate efficient design, maintenance, operation, and training. It also provides coordination between the engineering documents, facility safety basis, and procurement and construction documents*. [AP-341-611, ESM Ch. 1, Z10, ESM Ch. 8 D3060.90]
System Health Report (SHR)	Periodic assessment report of an active structure, system, or component (SSC). Required for Vital Safety Systems in Hazard Category 2 and 3 nuclear facilities. Assessment report addresses areas that may affect the system health (i.e., maintenance, configuration, material condition, vendor communications). System Health Report template is created as part of the System Health Monitoring Package for the SSC. [AP-341-802]
System Software	An element of support software, the computer programs used to provide basic or general functionality and facilitate the operation and maintenance of the application computer program. Examples include lower-level software layers, assemblers, interpreters, diagnostics, and utilities. [ESM Ch. 21, SOFT-GEN]
System Verification	The process of confirming that systems and structures fulfill specified design requirements, that the requirements were properly rolled into the design [ESM Ch. 20]
Systems Engineering (SE)	1. A proven, disciplined approach that supports management in clearly defining the mission or problem; managing system functions and requirements; identifying and managing risk; establishing bases for informed decision-making; and verifying that products and services meet customer needs [DOE O 413.3B] 2. SE is an integrative approach to realize, use, and retire engineered systems using systems principles and concepts, and scientific, technological, and management methods. The goal of the SE approach is to transform mission and operational requirements into system architecture, performance parameters, and design details. An interdisciplinary field of engineering and engineering management, it focuses on how to design and manage complex systems over their life cycles. *Its application underlies the development of a project's scope.* [DOE G 413.3-X draft 2024-2-3] 3. A systematic approach used for developing solutions for complex technical problems. An applied process for developing a preferred technical solution in response to a specific set of requirements. Involves mission analysis, requirements identification and analysis, development of engineering solutions, assessment of developed solutions, selection of a preferred solution, and verification that the solution meets the requirements. [P341; ESM Ch. 20] *SE is a specific engineering discipline and role [not the same as a Cognizant System Engineer (VSS) or Plant System Engineer (PSE, non-VSS)]. ESM Ch. 20 r0 uses SE for both Engineering and Engineer (discipline and its practitioner).*

Term	Definition
Systems Engineering Management Plan (SEMP)	A document that addresses a subcontractor AE's overall systems engineering management approach. It provides unique insight into the application of their standards, capability models, configuration management, and toolsets to their organization. This is different from a Systems Engineering Plan (SEP) which should address SE aspects on a particular program or project. The SEMP is usually written in response to LANL's SEP and describes the AE's proposed efforts for planning, controlling and conducting a fully integrated engineering effort. [ESM Ch. 20]
Systems Engineering Plan (SEP)	A LANL-produced planning document that describes the engineering effort to produce the deliverables required by this chapter. [ESM Ch. 20]
T	TOP
Tailored Standards Manual (TSM), STD-342-600	A distillation of the LANL Standards that are applicable and limited to ML-4 non-nuclear projects of low risk. *The TSM requires that all the applicable codes and standards be applied, meeting the requirements of LANL's prime contract with NNSA. The most important LANL preferences for operability and maintainability will also be met. This streamlined document is expected to help produce buildings more quickly and at a lower initial cost, and that this saving will offset any long-term issues associated with loss of some preferential aspects. Usage is controlled by project-specific Alternate Method. Projects not meeting TSM applicability criteria must use the entire Standards set (ESM, LMS, etc.) [VAR-10466r1]*
Technical Baseline	All documents and data used to identify, justify, and demonstrate the physical, functional, or operational requirements of Structures, Systems, and Components (SSCs). [AP-341-405, AP-341-605]
Technical Evaluation and Acceptance Plan (TEAP)	Document to identify the safety functions, critical characteristics (CCs), acceptance criteria, and acceptance methods that are sufficient to demonstrate that the item or service will perform its safety function. [NQA-1; DOE-HDBK-1230-2019; AP-341-703] *Document number being "TEA-…"*
Technical Project Specialist (TPS)	Assists project engineers (PEs) by taking on nontechnical tasks such as project setup, records management, data management, document management, issues tracking, and more. *In ES, TPSs are deployed from the ALDICP's Project Management Office.*
Technical Requirement	Characteristics (functional, performance, and operational) that define the key item attributes necessary to ensure that the item will meet technical requirements. Technical requirements for services describe the conditions under which the service must be provided. [P841-1 r4]
Technical Requirements Management System (TRMS)	An automation tool used to collect, sort, allocate, trace, and maintain requirements, AKA SE tool [ESM Ch. 20]

Term	Definition
Technical Safety Requirements (TSRs)	The limits, controls, and related actions that establish the specific parameters and requisite actions for the safe operation of a nuclear facility and include, as appropriate for the work and the hazards identified in the Documented Safety Analysis for the facility: safety limits, operating limits, surveillance requirements, administrative and management controls, use and application provisions, and design features, as well as a bases appendix. [10 CFR 830.3]
Technically Qualified	ASME NQA-1 for an individual with the ability to successfully perform a task based on technical knowledge, experience, and/or education (as opposed to an individual qualified through a certification or testing program). [AP-341-605]
Temporary	In the context of structures and building codes (and LANL amendments to same), those installed for three years or less. [ESM Ch. 16 IBC-GEN; see Temporary heading]
Temporary Modification (TM)	Operating facility modifications installed for less than six months and are usually minor modifications to facility SSCs with respect to approved drawings or other design documents. Examples of temporary modifications include lifted electrical leads; electrical jumpers; temporary electrical loads; pulled circuit breakers; disabled annunciators; temporary set point changes; mechanical jumpers; bind or blank flanges; disabled relief or safety valves or vacuum breakers; installed or removed filters or strainers; plugged floor drains; temporary pipe supports; temporary repairs that allow equipment to remain, or be returned to service, in a condition that is not the same as the technical baseline; or modifications to establish an interface between an operating system and a system lay-up. [AP-341-504, *Temporary Modification Control* (TMC)]
Test & Inspection Plan (TIP)	A summary level plan identifying all applicable tests and inspections for a project as well as how those tests and inspections integrate into a Work Breakdown Structure or Construction Schedule, submitted by the constructor. [LMS 01 4000] *TIP Template: A comprehensive list of tests and inspections invoked by LANL's adopted codes, standards, and DOE directives. The Template is not specific to a project and is available electronically as ESM Ch. 16, IBC-IP, Att. I.* *VIT: In the past, a Verification of Inspection and Test (VIT) Plan was developed to document and approve inspection and testing requirements for nuclear facilities including acceptance criteria, implementing organizations, and whether the inspection or test was a Hold or Witness point. VIT Plans are no longer used. Test and inspection requirements and associated documentation can now be achieved using a combination of the TIP, ESM Ch. 15 Commissioning test reports, and Ch. 20 Systems Engineering V&V documents such as the Requirements Verification Matrix.*

Term	Definition
Test Acceptance Criteria (TAC)	A set of parameters that observed or measured during a test: 1) to determine if nuclear safety and regulatory permit functional or performance requirements are met for a component or system, or an integrated set of systems; or 2) to confirm an assumption used as a basis for design of such items. TAC can be either qualitative or quantitative. They are established only for those parameters that need verification through test and have a set of limits that are established by design. TAC specifies the location of measurement or the conditions for a test if it is necessary to provide a context for validation of the parameter. TAC can be expressed as an upper limit, lower limit, or a range (e.g., not to exceed 40 ft per minute, not less than 40 feet per min, or 40 feet per min ±10%). TAC is the term applied to test criteria used to confirm compliance with nuclear safety and regulatory permit requirements. [ESM Ch. 20]
Test Case	A set of test inputs, execution conditions, and expected results developed for a particular objective, such as to exercise a particular program path or to verify compliance with a specific requirement. [ESM Ch. 21, SOFT-GEN]
Testing	An element of verification for the determination of the capability of an item to meet specified requirements by subjecting the item to a set of physical, chemical, environmental, or operating conditions [ASME NQA-1].
Testing (software)	The process of: a. operating a system (i.e., software and hardware) or system component under specified conditions b. observing and recording the results c. making an evaluation of some aspect of the system (i.e., software and hardware) or system component to verify that it satisfies specified requirements and to identify errors. [ESM Ch. 21, SOFT-GEN]
Testing Agency	A firm providing independent, certified test results. [ESM Ch. 16 IBC-Gen, IBC-TIA] *For IBC-type work, chosen from a listing maintained by the LBO.*
Testing (Sub)Contractor	The person, company, or agent responsible to the prime subcontractor for: • Making inspections required for Cx. • Coordinating, scheduling, and managing Cx activities of the Subcontractor, sub-tier subcontractors, and suppliers. • Obtaining documentation required for Cx from the Subcontractor, sub-tier subcontractors, and vendors. [ESM Ch. 15]
Test Plan (procedure)	A document that describes the approach to be followed for testing a system or component. Typical contents identify the items to be tested, tasks to be performed, and responsibilities for the testing activities. [ESM Ch. 21, SOFT-GEN]

Term	Definition
Test Review Board (TRB)	The group of representatives from the Design Authority, Quality Assurance, LANL Engineering, LANL Startup and Testing Services Group, and Facility Operations responsible for reviewing and approving Cx test results. [ESM Ch. 15]
Title I Preliminary Design	The preliminary stage of project design. In this phase, the design criteria are defined in greater detail to permit the design process to proceed with the development of alternate concepts and a Title I design summary, if required. DOE G 430.1-1, Cost Estimating Guide *Continues the design effort utilizing the conceptual design and the project design criteria as a basis for project development. Title I design develops topographical and subsurface data and determines the requirements and criteria which will govern the definitive design. Tasks include preparation of preliminary planning and engineering studies, preliminary drawings and outline specifications, life-cycle cost analysis, preliminary cost estimates, and scheduling for project completion. Preliminary design provides identification of long lead procurement items and analysis of risks associated with continued project development. [Superseded DOE 4700.1 (Chg 1 Attachment 3, 6-2-92)]*
Title II Design	The definitive stage of project design. The approved Title I concept and the supporting documentation prepared for Title I forms the basis of all activity in Title II. Definitive design includes any drawings, specifications, bidding documents, cost estimates, and coordination with all parties that might affect the project; development of firm construction and procurement schedules; and assistance in analyzing proposals or bids. DOE G 430.1-1, Cost Estimating Guide *This continues the development of the project based on approved preliminary design (Title I). Definitive design includes any revisions required of the Title I effort; preparation of final working drawings, specifications, bidding documents, cost estimates, and coordination with all parties which might affect the project; development of firm construction and procurement schedules; and assistance in analyzing proposals or bids. [Superseded DOE 4700.1 (Chg 1 Attachment 3, 6-2-92)]*

Term	Definition
Title III Services	1. The inspection portion of project engineering design & inspection (ED&I). The activities identified in DOE Order 4700.1, *Project Management Systems*, for inclusion in Title III can be separated into two categories: office support and field services. DOE G 430.1-1, Cost Estimating Guide 2. Those activities required to assure that the project is constructed in accordance with the plans and specifications (e.g., construction inspection), and that the quality of materials and workmanship is consistent with the requirements of the project (e.g., materials testing). *[Superseded DOE 4700.1 (Chg 1 Attachment 3, 6-2-92)]* *Design Agency services in Title III normally include review and approval of submittals; RFI and SDDR review, disposition, and incorporation as part of the design or design changes; review/comment on change order requests affecting design scope or quality; processing of non-conformance reports; creation, review, disposition and incorporation of design revision documents including DRNs and FCRs; seismic anchorage and bracing design of non-structural (e.g., architectural, mechanical and electrical) components (if not completed in design phase), assistance with IBC Ch. 17 Special Tests, structural observation where required by ESM Chapter 16, and typical standard-of-care observation of work in general for other disciplines for conformance to design; project close-out activities which include participating in the final inspection; preparation of record documents including updated drawings. [ESM Ch. 1 Z10]*
Toolbox code	Software that is listed on the DOE Safety Software Quality Assurance Central Registry [ESM Ch. 21, SOFT-GEN]
Total Project Cost (TPC)	All costs between CD-0 and CD-4 specific to a project incurred through the startup of a facility, but prior to the operation of the facility. Thus, TPC includes Total Estimated Cost (TEC) plus Other Project Costs (OPC). Note: Where the LANL Standards use TPC for requirements, for projects below 413.3B/CD thresholds use equivalent SD350 project phases. TEC: All engineering design costs (after conceptual design), facility construction costs and other costs specifically related to those construction efforts. TEC will include, but is not limited to project, design, and construction management; contract modifications (to include equitable adjustments) resulting in changes to these costs; design; construction; contingency; contractor support directly related to design and construction; and equipment rental and refurbishment. OPC: All other costs related to a project that are not included in the TEC. OPCs will include but are not limited to: research and development; conceptual design and conceptual design report; startup and commissioning costs; NEPA documentation; PDS preparation; siting; and permitting requirements. [DOE O 413.3B Chg 7 from here]
Traceability	The ability to trace history, application, or location of an item and like items and activities by means of recorded identification. (ASME NQA-1) [AP-341-703]

Term	Definition
Tracing	A process to relate the source of requirements with implementing documents in a manner that is transparent, stable, and auditable. Tracing is bi-directional, meaning that a requirement can be traced to all implementing documents, and each requirement of an implementing document can be traced back to its source. [ESM Ch. 20]
Trade Study	An analysis of alternatives, normally performed early in the design process. *See the* Alternative Studies Learning Guide *in the* Engineering Learning Guide *collection. See also ESM Ch. 20.*
Training and Qualification (T&Q)	Within CoE, the program ensuring workers subject to PD340 have the knowledge, skills, and abilities to perform their jobs safely and effectively. *Some worker positions are qualified (see definition for same) T&Q website here.*
Triad National Security, LLC (TNS)	The limited liability company that manages and operates LANL under contract with the National Nuclear Security Administration (NNSA) since 9 June 2018. Take all occurrences of "LANS," the previous Contractor, to mean Triad except when LANS is in a clearly historical usage like this sentence.
U	TOP
UNIFORMAT	A format for classifying building elements and related sitework. Elements, as defined here, are major components common to most buildings. Elements usually perform a given function, regardless of the design, specification, construction method, or materials used. [*UNIFORMAT II Elemental Classification for Building Specifications, Cost Estimating, and Cost Analysis*, NISTIR 6389 (1999), which is based on ASTM E1557-97 *Uniformat II Classification for Building Elements*]. *LANL stayed with the 1997/98/99 (not 2010) version of this work breakdown structure for system/subsystem level numbering in ESM sections and RCDs because NNSA uses it in BUILDER asset management database. Ex. no.: D5020.*
Utilities	Services to and from structures such as potable and fire water, sanitary sewer, steam & condensate, natural gas, telephony, and electrical transmission and distribution. [ESM Ch. 1, Z10]
Unreviewed Safety Issue (USI)	For an accelerator, a significant increase in the probability of, or consequences from (1) a planned modification to documentation, systems, or components (including new activities) that creates a previously unanalyzed postulated accident or condition that could result in a significant adverse impact; or (2) discovery of a previously unanalyzed condition. [SBP-113-3-R4]
Unreviewed Safety Question (USQ)	A situation where (1) the probability of the occurrence or the consequences of an accident or the malfunction of equipment important to safety previously evaluated in the documented safety analysis could be increased; (2) the possibility of an accident or malfunction of a different type than any evaluated previously in the documented safety analysis could be created; or (3) the documented safety analysis may not be bounding or may be otherwise inadequate. [10 CFR 830.3(a); SBP-112-3-R5.3]

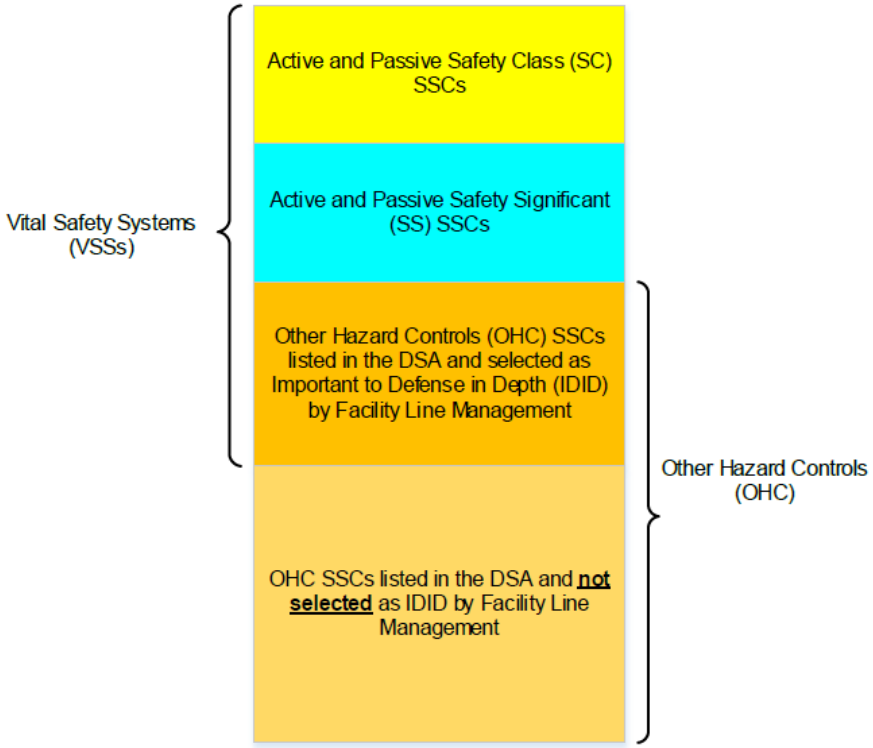
Term	Definition
V	TOP
Validation (final product)	The process of confirming that a requirement meets high level functional and performance requirements and is necessary, consistent, unambiguous, feasible, and measurable. [ESM Ch. 20]
Validation (software)	The process of exercising or evaluating a system or system component by manual or automated means to ensure that it satisfies the specified requirements and to identify differences between expected and actual results in an operating environment (Ref. NQA-1); and providing evidence that the software, and its associated products, satisfies system requirements allocated to software at the end of each life cycle activity, solves the right problem (e.g., correctly models physical laws, implements business rules, uses the proper system assumptions), and satisfies the intended use and user needs (Ref. DOE O 414.1D). [ESM Ch. 21, SOFT-GEN]
Value Engineering (VE)	A structured technique commonly used in project management to optimize the overall value of the project. Often, creative strategies will be employed in an attempt to achieve the lowest life-cycle cost available for the project. The VE effort is a planned, detailed review/evaluation of a project to identify alternative approaches to providing the needed assets. [Directives Definitions] *SMEs are generally a member of SAVE International and rare within the DOE enterprise.*
Variance	A release from compliance with one or more requirements, as granted by the requirement owner. [adapted from DOE O 252.1D Chg 1]. [ESM Ch. 1 Z10] *See also Alternate Method. Main usage: Form 2137, "Conduct of Engineering Request for Variance or Alternate Method." When a DOE/NNSA mandate is involved, it is also an Exemption.*
Vendor Submittals	Vendor submittals required for the procurement of an item per the design requirements. For example: Certificate of Conformance (CoC), Certified Material Test Report (CMTR). [AP-341-517]
Verification	The act of reviewing, inspecting, testing, checking, auditing, or otherwise determining and documenting whether items, processes, services, or documents conform to specified requirements (Ref. NQA-1). *This process step appears in many contexts, including design verification, installation (e.g., QC, QA, inspection), testing and commissioning, and readiness/startup (e.g., Implementation Verification Review); see those terms.*

Term	Definition
Verification (software)	The act of reviewing, inspecting, testing, checking, auditing, or otherwise determining and documenting whether items, processes, services, or documents conform to specified requirements (Ref. NQA-1); and providing objective evidence that the software and its associated products conform to requirements (e.g., for correctness, completeness, consistency, and accuracy) for all life cycle activities during each life cycle process (e.g., acquisition, supply, development, operation, and maintenance); satisfy standards, practices, and conventions during life cycle processes; successfully complete each life cycle activity; and satisfy all the criteria for initiating succeeding life cycle activities (e.g., building the software correctly) (Ref. O 414.1D). [AP-341-605, ESM Ch. 21, SOFT-GEN]
Verification Document	Evidence supporting the verification process. *Verification will always entail the signature of the authorized individual attesting to acceptability. Where warranted by the scope of the change or the importance of the facility or SSC, provide a statement of observations or more extensive objective evidence documents (e.g., results, reports, photos). [AP-341-519 FM01]*
Vital Safety System (VSS)	Safety Class (SC) or Safety Significant (SS) SSCs as defined in a nuclear facility's DOE-approved safety basis documentation, plus Other Hazard Controls (OHC) SSCs listed in the facility Documented Safety Analysis and selected as Important to Defense in Depth (IDID) by facility line management. [P341, AP-341-101] *See graphic that follows the "Z" definitions. Includes Engineered Safety Feature(s). Each VSS will have a Cognizant System Engineer (CSE) assigned; see* CSE Assignment/Qualification Listing *on CoE Resources page. Term traces to March 8, 2000 or earlier — e.g., Board letter forwarding "Recommendation 2000-2, Configuration Management -- Vital Safety Systems."*
Voltage (Low, Medium, High)	*LANL-specific voltage range definitions are in ESM Ch. 7, Section D5000 and "low" differs from homeowner-typical.*
Voluntary Consensus Standard (VCS)	VCS are technical documents, such as test methods, specifications, and terminology, that are developed or adopted by VCS bodies using procedures that have safeguards to ensure that the standards development process is open to all interested parties, and that all input and viewpoints are taken into account and treated fairly. VCS bodies are generally private sector, not-for-profit entities such as organizations, associations, or technical societies. [EPA] *LANL subscribes to Accuris EWB services for most VCS. Click for non-EWB ones including IEEExplore for non-NFPA electrical, electronic, software. VCS bodies are also called standards developing organizations (SDOs).*
W	TOP
Walk-down	A visual inspection of the structure, system, and component (SSC) to identify physical configuration and discrepancies with currently approved SSC documentation. [AP-341-510]

Term	Definition
Walk-down Team	Personnel responsible for gathering information during the walk-down and verifying and documenting the accuracy and completeness of this information. Each walk-down team consists of at least two members (i.e., preparer and verifier). [AP-341-510]
Welder	One who performs manual or semiautomatic welding. Within the LANL Welding Program, the term Welder also applies to welding operator, brazer, and brazing operator, as appropriate to the context of use. [ESM Ch. 13, Vol. 1, 1-99]
Welder Certification	Written Certification that a welder has produced welds meeting a prescribed standard of welder performance. (See also Welder qualification) [ESM Ch. 13, Vol. 1, 1-99]
Welder Qualification	The demonstration of a welder's or welding operator's ability to produce welds meeting prescribed standards. (Normally by hands on test) [ESM Ch. 13, Vol. 1, 1-99]
Welding Consumables	Materials required by a Welding Procedure Specification (WPS), Welding Fabrication Procedure (WFP), or Welding Technique Sheet (WTS) to produce a welded or brazed joint. These materials include, but are not necessarily limited to coated electrodes, bare filler rods and wire, flux-cored spooled wire, metal core electrodes, fluxes, gasses, and pre-placed consumable inserts, etc. [ESM Ch. 13, Vol. 1, 1-99]
Welding Fabrication Procedures (WFP)	Process procedures prepared and certified by LANL that contain the requirements for welding to the rules of a fabrication standard. LANL welding procedures including welding procedure documents prepared by predecessor or contractor organizations. [ESM Ch. 13, Vol. 2; Vol. 1, 1-99] *The collection in Vol. 2 is not current material.*
Welding Operator	One who operates adaptive control, automatic, mechanized, or robotic welding equipment. [ESM Ch. 13, Vol. 1, 1-99]
Welding Procedure Specifications (WPS)	A written document that provides the required welding variables for a specific application to assure repeatability by a properly trained welders and welding operators and provides direction to the welder or welding operator for making production welds in accordance with Code requirements. [ESM Ch. 13, Vol. 1, 1-99; Vol. 3]
Welding Processes	Common processes: flux-core arc welding (FCAW aka flux-core), gas metal arc welding (GMAC aka MIG), gas tungsten arc welding (GTAW aka TIG), oxygen fuel welding and brazing (OFW), plasma arc welding (PAW), stud welding-resistance and captive discharge (SW), submerged arc welding (SAW aka sub-arc welding), shield metal arc welding (SMAW aka stick), torch brazing (TB), and thermite welding. [ESM Ch. 13, Vol. 1, 1-99]
Welding Qualification Technique Sheet (WQTS)	Contain the specific test requirements which will provide standardization for testing and are designed to provide best ranges for limits of qualifications. [ESM Ch. 13, Vol. 1, 1-99; Vol. 4]

Term	Definition
Welding Qualification Test (WQT)	Welder Qualification Test – A set of standard tests designed and used for welder qualification (see GWS 1-05, Welder Performance Qualification/Certification) [ESM Ch. 13, Vol. 1, 1-99]
Welding Technique Sheet (WTS)	Documents that contain the specific requirements for welding various thicknesses of materials utilizing various welding processes. These WTS requirements apply to a limited number of specific welding operation or welding conditions (e. g, critical, costly) and are used in conjunction with the requirements of the WPS, WFP, and GWS. [ESM Ch. 13, Vol. 1, 1-99]
Whole Building Design Guide (WBDG)	Website touting integrated "whole building design techniques and technologies." *Under Federal facility Criteria, useful material includes current specs from the VA and the military's Unified Facilities Guide Specifications (UFGS), and archived NASA specs; many DoD, VA, and NASA standards; and non-LANL O&M criterion.*
Witness Point	A point in the process where an inspection, test, or activity point is reached that requires notification of the designated individual that the items are available for the designated inspection, test, or activity. Work may proceed past the point and work is not required to stop if the requester is not present. [P330-8; LMS 01 4000] *See also Hold Point.*
Work Area Outlet	A device placed at user workstation for termination of horizontal media and for connectivity of network equipment. [ESM Ch. 19, D60]
Work Instruction (WI)	1. A [Local Procedure type] document that provides specific instructions on how an organization will perform a specific work task. A Work Instruction (WI) may be called a Desk Manual, Performance Standard, or have another appropriate title. [LANL Definitions re PD311] 2. An implementing document that provides detailed steps for accomplishing specific tasks. *[AP-341-401, which has a template for WIs; WI is preferred template/term for CoE-issued — versus Desk(top) Instruction].*
X	TOP
	reserved for future use
Y	TOP
Yet to be Implemented Changes	Design changes posted against facility Technical Baseline documents that are either in the design development phase, or the design has been approved but not yet implemented, or the implementation is in progress. [AP-341-402]
Z	TOP
	reserved for future use

VSS, OHC, and IDID Graphic Referenced by those terms and others



7.0 Change Control

The Conduct of Engineering Office is responsible for maintaining this document and will do so on the same maximum interval as APs.[5]

See Section 3.0 for suggestion processes.

8.0 History

Date	Revision	Description
5/06/2024	0	Original issue often using definitions in current COE documents, plus many others. Incorporated VAR-10642, *Priority, Support, and General Document Definitions.*

9.0 Contact

Conduct of Engineering Office, via methods in Section 3.0.

[5] Per AP-341-401 r6, five years maximum, but anticipating at least annually. As the governing CoE definitions document, revisions affecting requirements or their satisfaction must follow CoE document reviews and approvals commensurate with same, including IQPA and Issuing Authority (ES-DO) where applicable. All other changes (e.g., merely helpful entries, usage note and reference changes, hyperlink maintenance) may be performed without a formal review process or IQPA approval and issued by the Responsible Manager (CoE Office Director). Of these, administrative issues may be simply fixed while significant ones will be marked by revision number incrementation (e.g., r0.1, r0.2…; r1, r2…; Chg 1).