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LANL MASTER TECHNICAL EVALUATION AND ACCEPTANCE PLAN

 for Commercial Grade Dedication of

High Confidence Reinforced Concrete per

LANL Master Specification Section 03 3021,

Reinforced Concrete–High Confidence

Plan Revision 1, June 21, 2018

This TEA Plan template may be used when dedicating structural concrete for ML-1 (safety class) and ML-2 (safety significant) applications. Develop the final TEA Plan based on specific end-use applications (see Section 2.0) and safety functions (see Section 3.0) that must be validated as applicable by the engineer and Facility Design Authority Representative prior to use. For example, this TEA Plan does not consider safety functions associated with confinement or radiological shielding which may require additional critical characteristics such as permeability or a specific density of the concrete.

Commercial grade dedication (CGD) is used when the concrete supplier/batch plant is not on the Institutional Evaluated Suppliers List (has not been fully qualified by LANL Supplier Quality as complying with NQA-1 and specification requirements) or where a subcontractor (under their IESL-approved program) cannot qualify the concrete supplier.

This template should be used in addition to the typical QA, testing, and inspection requirements of the specific project specification (based on LANL Master Specification 03 3021), Verification Inspection and Test Plan (VIT), and applicable codes/standards including IBC code version (see Engineering Standards Manual [Chapter 16](http://engstandards.lanl.gov/ESM_Chapters.shtml#esm16)).

The project-specific TEA Plan and associated CGD Package for high-confidence reinforced concrete shall be reviewed and approved in accordance with the requirements of AP-341-703, *Commercial Grade Dedication.*

This template may also be used by Subcontractors performing CGD in accordance with their approved QA Program and CGD procedures; however, any technical evaluation, engineering reviews, independent verification, and approvals required by such program and Subcontract documents shall be performed and obtained prior to use.

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| **1.0 Technical Evaluation and Acceptance plan information and approval** |
| 1.1 title:       |
| 1.2 Commercial Grade Service: [ ]  | 1.3 Commercial Grade Item: [ ]  |
| 1.4 New/Upgrade Item: [ ]  | Service: [ ]  | Equivalent or Like-for-like Item: [ ]  LLR/EIE No.: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1.5 Project ID:       | 1.6 Project Title:       |
| 1.7 TA -       | 1.8 Facility No.:       | 1.9 Facility Name:       |
| 1.10 Technical Evaluation and Acceptance Plan Approval: |
| Preparer: |  |  |  |  |  |  |  |  |  |  |
| Name |  | Z Number |  | Org. |  | Signature |  | Date |
| Procurement Engineer: |  |  |  |  |  |  |  |  |  |  |
| Name |  | Z Number |  | Org. |  | Signature |  | Date |
| Quality Assurance SME: |  |  |  |  |  |  |  |  |  |  |
| Name |  | Z Number |  | Org. |  | Signature |  | Date |
| Cognizant System Engineer |  |  |  |  |  |  |  |  |  |  |
| Name |  | Z Number |  | Org. |  | Signature |  | Date |
| Facility Design Authority Representative: |  |  |  |  |  |  |  |  |  |  |
| Name |  | Z Number |  | Org. |  | Signature |  | Date |
| Derivative Classifier/Reviewing Official: |  |  |  |  |  |  |  |  |
|  | (Reviewed By) |  | Z Number |  | Review Date |  | Classification |
| Note: The Engineering Documents that are UCNI, or OUO must be marked in accordance with [P204-1, Controlled *Unclassified* *Information*](https://policy.lanl.gov/pods/policies.nsf/GPs/GP2%2BSAFEGUARDS). The Engineering Documents that are Classified must be marked in accordance with [P204-2, *Classified Matter Protection and Control* *Handbook*](https://policy.lanl.gov/pods/policies.nsf/GPs/GP2%2BSAFEGUARDS). |

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| **2.0 commercial grade item Or Service information** |
| 2.1 Item/Service Management Level: | ML-1 [ ]  | ML-2 [ ]  |  |
| 2.2 Nuclear Functional Classification | Safety Class [ ]  | Safety Significant [ ]  | N/A [ ]  |
| 2.3 Manufacturer:       | Manufacturer Part/Model No.:       |
| 2.4 Supplier:       | Supplier Part No.:       |
| 2.5 Item or Service Description:       |
| 2.6 Performance Requirements:       |
| 2.7 Service Conditions (including the most severe operating environment and seismic parameters):      |
| 2.8 Reference and attach the Item Critical Characteristics Determination form (AP-341-607-FM01) as applicable.      |
| 2.9 Does the item include ML-1 or ML-2 Safety Software (including embedded software/firmware)? Yes: [ ]  No: [ ] If yes, identify safety software’s contribution to the item’s safety function.      |
| 2.10 ML-1 or ML-2 Safety Software Information N/A: [ ]  |
| SSC Software: [ ]  | Non-SSC Software: [ ]  |  |
| Software Name:       | Software Version:       | Operating Environment:       | SWID No.:       |
| Other software design documents:       |

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| **3.0 Identification of SAfety Functions** |
| 3.1 Safety Functions for Host Structure, System, or Component *(from safety analysis documents)*: |
| No. | Safety Function | Functional Requirement | Performance Criteria | Source Document |
|  |       |       |       |       |
|  |       |       |       |       |
|  |       |       |       |       |
|  |       |       |       |       |
| 3.2 Safety Functions for Items or Services being Evaluated |
| No. | Safety Function | Contribution to Safety Function by the Item or Service | Active | Passive |
|  |       |       | [ ]  | [ ]  |
|  |       |       | [ ]  | [ ]  |
|  |       |       | [ ]  | [ ]  |

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| **4.0 Credible FAilure Modes and Effects Analysis** |
| 4.1 Credible Failure Modes and Effects Analysis: | N/A: [ ]  Explain:       |
| Credible Failure Mechanisms/Modes | Effects on Safety Function | Critical Characteristics to Mitigate Adverse Effects | Comments/Clarifications |
|       |       |       |       |
|       |       |       |       |
|       |       |       |       |
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| **5.0 Identification of Critical Characteristics, Acceptance Criteria, and Acceptance Methods** |
| 5.1 Identification Characteristics: |
| Safety Function No. | CC No. | Critical Characteristic (CC) | Acceptance Criteria  | Acceptance Method |
| N/A |  |       |       |       |
| N/A |  |       |       |       |
| N/A |  |       |       |       |
| 5.2 Physical Characteristics: |
| Safety Function No. | CC No. | Critical Characteristic (CC) | Acceptance Criteria (Including Tolerances) | Acceptance Method |
|  |  |       |       |       |
|  |  |       |       |       |
|  |  |       |       |       |
|  |  |       |       |       |
| 5.3 Performance Characteristics: |
| Safety Function No. | CC No. | Critical Characteristic (CC) | Acceptance Criteria (Including Tolerances) | Acceptance Method |
|  |  |       |       |       |
|  |  |       |       |       |
|  |  |       |       |       |
|  |  |       |       |       |
| 5.4 Technical Justification and Supporting Information:      |

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| **6.0 Sampling Plan** |
| 6.1 Sampling Plan Details (*provide details of any sampling plan other than 100% evaluation*) :[ ]  100% of items are evaluated.[ ]  A sample of the items lot is evaluated. Provide the technical basis and details below.      |

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| **7.0 REference Documents** |
| 7.1 Reference Documents (including national codes and standards, safety basis classification, specifications, drawings, catalog cut sheets etc.): |
| Document No. | Rev. | Document Title |
|       |  |       |
|       |  |       |

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| **8.0 List of attachments** |
| **Attachment No.** | **Document Title** |
| A | e.g., Catalog Cut Sheet, Design Criteria, FMEA |
|  |       |
|  |       |

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| **9.0 revisions**  |
| Rev No. | Date | Description of change (including impacts on procured items) | Initials and Z #s |
| Preparer | Proc. Eng. | QA SME | CSE | FDAR |
| 0 |  | Initial Approved Issue |  |  |  |  |  |
|  |  |  |  |  |  |  |  |