

November 7, 2016

Jack Rosentel  
Program Technical Licensing Manager  
459 Kennedy Boulevard  
Archbald, PA 18403

SUBJECT: AUDIT REPORT FOR FOR MAY 2-6, 2016, AUDIT OF LOCKHEED MARTIN  
TOPICAL REPORT NuPACD610000-047-P, "GENERIC QUALIFICATION OF  
THE NuPAC PLATFORM FOR SAFETY-RELATED APPLICATIONS"  
(TAC NO. ME7900)

Dear Mr. Rosental:

By letter dated June 28, 2011 (Agencywide Documents Access and Management System Accession No. ML11201A323), Lockheed Martin (LM) Nuclear Systems and Solutions submitted a topical report (TR) NuPAC\_ED610000-47-P, Revision -, which proposes to use a generic digital safety instrumentation and control platform (i.e., the Nuclear Protection and Control Platform) to implement Class 1E safety-related applications in United States nuclear power plants. The TR is for a generic platform, not a plant-specific implementation.

From May 2 through May 6, 2016, the U.S. Nuclear Regulatory Commission (NRC) staff performed a regulatory audit of the Trinity Road, Texas, facilities of LM. The audit was conducted to support the NRC staff evaluation of the NuPAC TR.

The purpose of this letter is to provide LM with the results of the regulatory audit. Documented in the report are the observations the NRC staff identified during the audit.

If you any questions or require any additional information, please feel free to contact me at 301-415-7297 or [Joseph.Holonich@nrc.gov](mailto:Joseph.Holonich@nrc.gov).

Sincerely,

**/RA/**

Joseph J. Holonich, Sr. Project Manager  
Licensing Processes Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Project No. 780

Enclosure:  
As stated

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ADAMS Accession No.: ML16131A002

\* concurrence via e-mail

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NAME	JHolonich	DHarrison	MWaters	KHsueh	JHolonich
DATE	10/3/2016	10/18/2016	10/31/2016	11/4/2016	11/7/2016

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AUDIT REPORT FOR MAY 2-6, 2016, AUDIT OF  
LOCKHEED MARTIN NUCLEAR SYSTEM AND SOLUTIONS,  
NUPAC ED610000-47-P, "GENERIC QUALIFICATION OF THE NUPAC PLATFORM FOR  
SAFETY-RELATED APPLICATIONS" TOPICAL REPORT  
(TAC NO. ME7900)

Instrumentation and Controls Branch

**Background:**

By letter dated June 28, 2011 (Agencywide Documents Access and Management System Accession No. ML11201A323), Lockheed Martin Nuclear Systems and Solutions (Lockheed Martin) submitted a topical report (TR) NuPAC\_ED610000-47-P, Revision -, which proposes to use a generic digital safety instrumentation and control platform (i.e., the Nuclear Protection and Control (NuPAC) Platform) to implement Class 1E safety-related applications in United States nuclear power plants. The TR is for a generic platform, not a plant-specific implementation.

**Material Used:**

- NuPAC EMC Test Report (TR610000-007) and related data sheets
- The Seismic Test Report (NuPAC\_TR610000-005) and related data sheets
- Environmental Test Report (NuPAC\_TR610000-004A) and related data sheets

**Team Assignments:** Deirdre Spaulding: Team Lead  
George Adams: Reviewer  
Dan Pomerening: Reviewer (off-site)

**Logistics:** Audit Location – Lockheed Martin, Trinity Road, Dallas, Texas  
Audit start 9 am, Monday, May 2, 2016  
Audit end 12 noon, Friday, May 6, 2016

**Material Covered (Environmental Qualification):**

Operability and Prudency Testing

For operability and prudency testing, the U.S. Nuclear Regulatory Commission (NRC) staff reviewed data files and compared the data logged during testing to recorded values on test record data sheets. In addition the NRC staff traced hand annotations from test results through log book entries to their documentation in test reports. The NRC staff discussed any discrepancies recorded on test record data sheets. In addition, the NRC staff discussed the upper and lower limits recorded on test record data sheets. In some cases, the limits would change to reflect different equipment used during testing. Lockheed Martin will provide clarifications to the limits and any recorded data discrepancies in revisions to test reports.

Enclosure

#### Tracking Anomalies/Trouble Reports to Resolution

The NRC staff discussed anomalies identified and documented on either test record data sheets or within the test results for an individual test included in the test reports. The NRC staff reviewed the associated trouble reports and their resolution and discussed the effect of any anomalies on qualification. In some cases, the resolution was in process. Lockheed Martin will document its resolution of anomalies and any effect they would have on qualification in revisions to test reports, the summary report, and the list of anomalies as appropriate. In addition, Lockheed Martin will identify those anomalies that would be closed at a later time.

#### Process for Reviewing Test Results against Criteria

The NRC staff focused this portion of the audit on electromagnetic interference/radio-frequency interference tests because this area would have more items needing resolution than other areas of the evaluation. In addition, the NRC staff reviewed seismic testing. The NRC staff reviewed the test results with the licensee. Lockheed Martin documented its test configuration, conduct of the test, and results in its test reports and laboratory reports. The NRC staff reviewed this information with the licensee against the published standard for each of the tests. In some cases discrepancies were identified in relation to the published standard. Lockheed Martin will document its resolution of any discrepancies in revisions to the test reports.

#### **Conclusion:**

The NRC audit team concluded that Lockheed Martin adequately addressed the items that were evaluated during the audit. For some concerns, Lockheed Martin went back to the testing lab, and subsequently revised test reports. For other concerns, Lockheed Martin reviewed test results and confirmed that their testing was consistent with requirements, and provided updated reports to the NRC. These revised test reports are to be reviewed by the NRC staff upon receipt.