

EA Operational Awareness Record	Report Number: OAR-EA-LA-EM-AREA G-2016-09-27
Site: Los Alamos National Laboratory (LANL) – Area G	Subject: Observation of Senior Review Board (SRB) Activities and Review of the Safety Basis (SB) Documentation to Allow Remediation of Nitrate Salt Containers Staged in Area G.
Dates of Activity: 09/27/16 – 09/29/16	Report Preparer: Jimmy S. Dyke
<p>Activity Description/Purpose: The U.S. Department of Energy (DOE) Office of Environment, Safety and Health Assessments, within the Office of Enterprise Assessments (EA), observed the SRB activities conducted by DOE Headquarters Office of Environmental Management (EM) and National Nuclear Security Administration (NNSA) senior management with representation of both the Los Alamos (LA) EM and NNSA Office Managers. EA conducted a detailed review of the safety evaluation report (SER) and associated SB documents for remediating nitrate salts, including: ABD-WFM-001, <i>Area G Support Activities</i>; ABD-WFM-005, <i>Waste Characterization, Reduction, and Repackaging Facility (WCRRF)</i>; and, the associated site Transportation Safety Document (TSD) amendment to allow movement of the remediated nitrate salts (RNS) containers from Area G to WCRRF for remediation. DOE Headquarters EM requested that EA observe the SRB and participate as deemed appropriate by EA.</p>	
<p>ATTACHMENT: None.</p>	
<p>Results: EA attended a three-day SRB. The SRB was led by DOE Headquarters EM with participation from the NNSA Associate Administrator for Safety, Infrastructure and Operations; the NA-LA Site Manager; and the LA-EM Site Manager. In addition, other nuclear safety and operations staff from EM, NNSA, and LANL were also present and actively participated in asking and resolving questions. The safety basis review team (SBRT) systematically presented the SER to the SRB in an open forum where questions were asked by the SRB and other participants concerning the SB documentation. The SRB thoroughly evaluated the SER and the draft SB change packages for Area G, WCRRF, and TSD. The DOE Headquarters EM Manager who led the SRB maintained a record of the discussions and the resolution of concerns. Over the three days, all concerns raised were thoroughly discussed and appropriately resolved. EA observed several positive attributes during the SRB activities, including:</p> <ul style="list-style-type: none"> • The joint EM and NNSA SRB was conducted in an open and transparent manner. • All participants were allowed to freely voice their concerns and questions. • All questions were resolved in the SER following thoughtful debate and, when needed, were supported with documentation of any engineering judgments supporting conservative decision making. • Senior management from EM and NNSA were actively involved in the discussions and also suggested revisions to the SER. • After completion of the SRB activities, the revised SER resulted in a more complete approval basis. • SB documents were improved through directed changes from the SRB and the SER. • The SER was revised in a real-time manner with immediate SRB and technical staff input on the verbiage. <p>EA Lines of Inquiry on the Safety Basis Documentation:</p> <ul style="list-style-type: none"> • Area G had a limiting condition for operation (LCO) for temperature on the refrigerator to be $\leq 57^{\circ}\text{F}$. The drums are cooled for four days prior to shipment to WCRRF. The LCO only had one surveillance requirement, which was to verify refrigerator air temperature once per day between 1 and 5 p.m. (hottest part of day) and within four hours prior to denesting RNS containers. EA inquired if the safety basis had considered the effect on the refrigerator air temperature of adding multiple hotter drums ($\sim 75^{\circ}\text{F}$) from the denested activity. It was determined that the safety basis had not evaluated that condition. Given that the surveillance occurs once in 24 hours, a change of air temperature could go unnoticed above the LCO value and the four-day cold soak on the containers could be invalidated. LANL evaluated the question and came back with a solution to allow only two drums per day to be added to the refrigerator. The SBRT codified the additional constraints on adding containers to the refrigerator in the SER as a condition of approval specifying a directed change. • EA provided a technical opinion regarding a concern with the implications of designating an ice jacket to be placed on the RNS drum when it is transported from Area G to WCRRF. The use of the ice jacket allows for a 12-hour transport time versus 4 hours without the jacket. The 12-hour transport time would provide a much 	

larger margin for safety (packaging and transport time is ~1-2 hours). The discussion questioned the quality assurance implications of calling the ice jacket a specific administrative control (SAC). EA referenced DOE Order 460.1 and the associated guide, which implement the 10 CFR 830 safe harbor for a transportation SB. The guide describes an approach in which reliance on packaging performance is a preferred way to ensure overall safety; however, an integrated approach that considers the packaging in combination with specified communication and control measures is also acceptable. The ice jacket is just one component of the package and would fall under the quality assurance requirements of the whole package and transportation system. There is no need to separate one component out and control it with a SAC. NA-LA and LANL chose to keep it and control it with a SAC. That approach is deemed by EA to be conservative and acceptable.

Overall Conclusions:

Attendance at the SRB allowed EA to provide their identified comments and observations on the Safety Basis documentation to Allow Remediation of Nitrate Salt Containers Staged in Area G. EA comments were discussed and appropriately addressed and, in some cases, resulted in directed changes to the SB documents through a Condition of Approval in DOE’s SER. This was EA’s second opportunity to observe the SRB approach used by DOE Headquarters EM. Both observations indicated that the SRB approach is very effective in ensuring, within a timely manner, that the safety documents are of an acceptable quality and technical accuracy prior to approval. The participants on the SRB demonstrated a commitment to safety and included safety personnel in a team approach to achieve a high-quality final product. Overall, the SRB members showed integrity and leadership in fulfilling the principles of integrated safety management and implementation of nuclear safety. EA views the SRB approach to approving SB documentation as a Best Practice, because the approach substantially improved the nuclear safety of the process through higher quality SB documentation and provided an innovative approach or method to improve the effectiveness and efficiency of DOE’s review and approval of SB documentation. Therefore, the SRB approach should be shared as a Best Practice with DOE sites and program offices.

<p>EA Participants</p> <ol style="list-style-type: none"> 1. William E. Miller (lead) 2. Jimmy S. Dyke 	<p style="text-align: center;">References (Key Documents, Interviews, and Observations)</p> <ol style="list-style-type: none"> 1. ABD-WFM-001, Attachment 1, <i>Area G Support Activities for the Transfer and Processing of RNS Waste</i>, Rev 0. 2. ABD-WFM-005, Attachment 1, <i>WCRRF Support Activities for the Treatment of RNS Waste</i>, Rev 0. 3. TMPMOD-P&T-444-R0, <i>Temporary SB Modification, transfer of Drums Containing RNS Waste from Area G to WCRRF</i>, Rev 0. 4. ABD-WFM-002, Attachment 1, <i>Technical Safety Requirements for RNS Waste Activities</i>, Rev 0. 5. ABD-WFM-006, <i>Technical Safety Requirements for WCRRF RNS Waste Processing</i>, Rev 0. 6. SA-SBD-452-R0, <i>Analysis of Remediated Nitrate Salts Accidents with Mitigated Consequence Estimate over the EG Based on DOE Standard 3009-2014 Criteria for Area G BIO and WCRRF BIO RNS Attachments</i>, Rev 0.
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Were there any items for EA follow up? Yes No

<p>EA Follow-Up Items</p> <ol style="list-style-type: none"> 1. Perform focused observations of RNS waste container remediation activities. 2. Share Best Practices. 	
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