

National Aeronautics and
Space Administration
NASA Headquarters
Washington DC 20546-0001



January 22, 2020

Reply to Attn of: **Chief Health and Medical Office**
M-QA-2020-006

Mr. Michael C. Hay
Director
Nuclear Regulatory Commission (NRC) Region IV
1600 East Lamar Boulevard
Arlington, Texas 76011-4511

Dear Mr. Hay:

The National Aeronautics and Space Administration (NASA) received memorandum EA-19-128 from the Nuclear Regulatory Commission (NRC) in late December 2019. The subject of the memorandum was the NRC Inspection Report number 999-90004/2019-001, which relates to apparent violations at the NASA Michoud Assembly Facility (MAF) in 2019.

The NRC report was issued in response to apparent violations encountered during the announced special inspection conducted by the NRC on September 23, 2019. NASA appreciates the opportunity to respond to each of the apparent violations.

Based on the results of the NRC inspection, three apparent violations were identified: (1) failure to possess an NRC specific materials license; (2) loss of control of a generally licensed source; (3) failure to provide timely notification. NASA accepts responsibility for each violation and has taken the necessary corrective actions as outlined in the Enclosure – Response to Violations as stated in NRC Report 999-90004/2019-001; EA-19-128. Each violation has been addressed independently. NASA aggressively implemented corrective actions for all violations and believes MAF is now in full compliance.

If you have comments or questions regarding corrective action plan outlined in the enclosure, please contact the NASA MAF Operations Manager, Mr. Keith Savoy (504) 257-3439.

Sincerely,



J.D. Polk, DO, MS, MS, MMM, CPE, FACOEP, FAsMA
Chief Health and Medical Officer

Enclosure

cc:

HQ/Deputy Chief Health and Medical Officer, OCHMO/Dr. Michaud

HQ/Sr. Environmental Health Officer, OCHMO/Dr. Plaza

MSFC/ Director/Ms. Singer

MSFC/Director, Center Operations/Mr. Malone

MSFC/Officer, Occupational Health/Mr. Thaxton

MSFC/Manager, Occupational Health Office/Mr. Davis

MAF/Site Director/Mr. Champion

MAF/Manager, Operations Office/ Mr. Savoy

MAF/Manager, S3 Health Physics/ Mr. Engelhard

KSC/Health Physicist, Great Southern Engineering/Ms. Gurney

KSC/Health Physicist, Great Southern Engineering/Mr. Nickell

Response to Apparent Violations

Subject: NRC Report 999-90004/2019-001; EA-19-128

This enclosure is to address the National Aeronautics and Space Administration (NASA)'s three Apparent Violations at the Michoud Assembly Facility (MAF) as listed in the subject NRC Report 999-90004/2019-001.

1) Violation 1

Title: Failure of NASA to possess a U.S. Nuclear Regulatory Commission (NRC) specific materials license authorizing possession of certain byproduct materials.

Reason for Violation: During the period when Lockheed Martin (LM) managed NASA MAF as a Government Owned Contractor Operated (GOCO) facility, they were the licensed commercial entity that possessed ownership of the associated byproduct materials and maintained a Radioactive Materials License as issued by the Louisiana Department of Environmental Quality (LDEQ). When LM's contract work at MAF ended in 2009, the byproduct source materials ownership and custody were directly transferred to NASA as the MAF Federal Facility owner. At this time, NASA MAF was formally issued an LDEQ Radioactive Materials License by the state of Louisiana for the byproduct materials which was consistent with commercial licensing practices. LDEQ failed to recognize that NASA, a federal entity, could not own an LDEQ Radioactive Materials License issued by the state.

As NASA's Operations Support contractors at MAF changed over time, NASA continued to maintain the source ownership and the associated MAF LDEQ license.

This condition was not recognized as a potential violation until the NRC questioned this licensing approach (i.e. - whereby LDEQ was governing a Federal entity) when NASA reported the loss of the generally licensed source to the LDEQ.

Corrective steps taken: NASA MAF has aggressively transferred all byproduct material sources that require an NRC License to other properly licensed disposal/recycle/handling facilities. The final byproduct source requiring a specific NRC License, a Cesium (Cs)-137-calibration device with a sealed source of 115 millicuries (mCi), was transferred to another properly licensed facility on July 30, 2019. The removal of this final Cs-137 source from the site eliminated NASA MAF's requirement of possessing a specific NRC license. This was the final action necessary to bring NASA MAF into compliance.

Date for full compliance: July 30, 2019.

2) Violation 2

Title: Loss of control of a Generally-Licensed Device.

Reason for Violation: The MAF Operations support contractor, Jacobs Technology, inadvertently transferred a piece of test equipment with an internal radioactive source to

a non-licensed recycle facility on September 26, 2013, due to the source not being recognized as present in the item by the NASA support contractor, nor the receiving recycler.

The test equipment units had two (2) externally identical models, one with a radioactive source and one without. The unit with a radioactive source had the "Radioactive" label affixed on the control panel while the other unit did not. The individuals performing the recycling activity did not recognize that one of the units had a radioactive label and a radioactive source. The wrong unit was mistakenly recycled and therefore was not properly transferred to the recycling facility. After evaluation of available records, this was likely the cause for this mistake.

Corrective steps taken: The device with the sealed source, Alnor 7000U dew Point indicator, had an Americium (Am)-241 source of 35 μ Ci. MAF had eleven (11) of these devices in inventory; six (6) with the Am-241 source and five (5) with a Radium-226 (7 μ Ci). These eleven devices with sealed sources within them were transferred off site to a licensed disposal facility on October 16, 2017.

NASA MAF has eliminated all accountable byproduct materials from the site, which eliminates the possibility for future mishandling, identification or sending of such items to non-licensed facilities in the future. In addition, NASA MAF has several Tritium exit signs awaiting disposal and plans to have these signs removed from site by the end of September 2020. Once this is completed, there will be no generally licensed material on site. NASA MAF will inform the NRC via memo, once these Tritium exit signs are properly disposed.

Date for full compliance: September 30, 2020

3) Violation 3

Title: Failure to provide timely notification to the NRC/State following identification of the missing source

Reason for Violation: The loss of the equipment discussed in Violation 2 was discovered during the transition in Radiation Safety Officers (RSO) and while performing the source inventory incident to transfer of duties. The byproduct material mishandling was discovered by the new RSO on August 15, 2018 and reported to the NASA MAF Environmental Health (EH) Manager responsible for this site's Environmental Health (EH) Program. The RSO recommended to the NASA MAF EH Manager that the LDEQ be notified of the source being mishandled at this time. The NASA MAF EH Manager directed the RSO to perform an investigation to attempt to validate the final disposition and location of the lost byproduct material before further action.

Once the RSO had performed the appropriate investigation and concluded the mishandled source was improperly transferred to the recycler, it was recommended that the LDEQ be notified. The NASA MAF EH Manager informed the RSO that he required additional NASA reviews before making any notification to LDEQ. The NASA MAF EH Manager failed to inform NASA MAF of this finding and retired in December 2018.

In May 2019, the RSO recommended to the NASA MAF Operations Manager that the LDEQ needed to be notified, at which point he directed the RSO to make appropriate immediate notifications to the LDEQ, which were completed on May 9, 2019.

Corrective steps taken: Appropriate notification of the byproduct material loss/mishandling was made to regulators on May 9, 2019. During the NRC Exit briefing of the announced special inspection conducted on September 23, 2019, the importance of timely notification was stressed in accordance with applicable standards. Both NASA staff and MAF facilities contractors understand the significance of and process for distributing notifications. Specifically, the NASA MAF Operations Manager thoroughly understands the importance of appropriate and timely notification to regulatory agencies as required by OSHA, NRC and NASA Procedural Requirements. This was fully demonstrated once NASA MAF Operations Manager was notified of the incident in early of May 2019.

In summary, all cognizant NASA MAF staff and site contractors have been made fully aware and understand the need for timely reporting of lost byproduct materials, as well as other regulatory violations discovered.

Date for full compliance: September 23, 2019