



Savannah River Site Watch

**Savannah River Site Watch
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NRC Issues Final Inspection Report for MOX Plant Construction with Two Violations; Failure to Keep Records for Stored Equipment may Pose Challenges for its Future Use in a “Repurposed” Facility

Columbia, SC – The U.S. Nuclear Regulatory Commission has issued its final inspection report on the bungled construction of the plutonium fuel (MOX) project at the Savannah River Site, resulting in two violations of NRC regulations. The inspection report closes out the NRC’s role with the project and identifies problems that could impact the U.S. Department of Energy’s future use of the MOX building and equipment purchased for it.

The NRC’s inspections covered the period from July 1, 2018 to February 8, 2019, a much reduced inspection schedule than when construction was considered by some to be proceeding. The NRC cover letter states “NRC inspectors documented two findings of very low safety significance (SL IV) in this report. These findings involved violations of NRC requirements.” The violations are of lower significance as the Mixed Oxide Fuel Fabrication Facility was not operable and no plutonium was ever introduced into it.

The [NRC’s March 19, 2019 cover letter and final MOX inspection report](#), addressed to CB&I Areva MOX Services and copied to DOE’s National Nuclear Security Administration, were quietly posted by the NRC on March 20, 2019, when they were spotted by Savannah River Site Watch.

The NRC inspectors noted two significant violations by MOX Services: 1) “for the applicant’s failure to ensure that penetration plate bolting was snug tightened per the design drawings, and failure to ensure that work performed subsequent to final inspection contained direction to ensure bolting was snug tightened per design drawings” – “These penetration plates are stay in place forms that contain the concrete which will be poured between the walls.” and 2) “The NRC identified an SL [Severity Level] IV NCV for the applicant’s failure to perform all maintenance requirements [for stored equipment] specified by the manufacturer’s instructions as required by the MPQAP-2016-0001, “MOX Project Quality Assurance Plan,” Revision 16.”

Concerning the failure to tighten penetration plate bolts, used to secure walls, the report stated “the inspectors determined that the applicant’s failure to ensure that penetration plate bolting was snug tightened per the design drawings, and failure to ensure that work performed subsequent to final inspection contained direction to ensure bolting was snug tightened per design drawings and the MPQAP was a more than minor finding. Specifically, the deficiency represented a substantive failure to establish or implement a quality oversight function.”

It is unknown if any proposed “repurposing” of the MOX plant, which would be under less rigorous DOE regulations and not NRC regulations, will necessitate repair of this plate bolting problem. If uncorrected, the problems could pose a safety risk if the facility ever operates in the future. MOX Services has 30 days to challenge the violations but it is expected they will not respond as the project has been halted.

Concerning the violation related to stored equipment, the NRC also determined that “the applicant had failed to perform all maintenance requirements specified by the manufacturer’s instructions” concerning the “layup and storage of equipment in various storage locations at the facility.” The NRC additionally determine that “The extent of condition documented a failure to perform all the manufacturer’s specified instructions on numerous QL-1 [Quality Level] equipment, such as, fans, motors, valves, and dampers.”

Failure to maintain stored equipment per NRC regulations could result in inability to document safe condition of such equipment that might be designated for another DOE purpose not regulated by the NRC, such as production of plutonium “pits” for nuclear weapons or any other non-MOX use.

“Failure to properly maintain equipment stored for use in the MOX facility has deeper implications beyond record keeping and may result in equipment that doesn’t function properly if it is applied to other uses, especially involving nuclear materials,” said Tom Clements, director of the public interest group Savannah River Site Watch. “It is essential that all equipment that has not been properly maintained be identified, undergo rigorous testing if there is any possibility it might be reused and the fractured maintenance schedule be renewed, if possible, to assure that manufacturer’s requirements are met,” added Clements. “Some equipment may have to be discarded rather than being used for other DOE purposes or resold to non-DOE entities,” said Clements.

The NRC’s cover letter and inspection report, dated March 19, 2019 – entitled “MIXED OXIDE FUEL FABRICATION FACILITY- NRC INSPECTION REPORT NO. 70-3098/2018-004” – confirms termination of MOX plant inspections and that the current report is the last one to be issued: “By letter dated February 8, 2019 (ADAMS Accession Number ML18324A665), the NRC issued Revision 5 of the CA, which terminated NRC regulated activities at the MFFF. [Mixed Oxide Fuel Fabrication Facility] At this time, the NRC ended inspection and oversight of the MFFF project. This report is the final inspection report for MOX Services.”

In the inspection report, the NRC also reiterated that it had been informed by MOX Services about project termination: “By letter dated November 1, 2018 (Agencywide Documents Access and Management System [ADAMS] Accession Number ML18305A356), the NRC was notified that as of October 12, 2018 that MOX Services ceased NRC regulated construction activities on the MFFF.”

When the MOX plant was terminated, a host of unnamed construction problems faced the facility and much corrective “rework” was left unfinished. It is unknown how such problems are being catalogued during facility closure and how they will possibly impact any future use of the facility. Some workers have reported to SRS Watch that many construction problems had not been identified and could never be corrected due to their hard-to-access location in the facility. “All construction problems in the shuttered MOX building and all necessary rework must be precisely identified and corrected if the facility will be reused,” according to Clements of SRS Watch.

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Notes:

Final NRC inspection report of MOX plant, dated March 19, 2019:

<https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML19078A223>

SRS Watch news release of February 11, 2019, documenting termination of MOX plant “construction authorization” (aka construction license) by the NRC:

http://www.srswatch.org/uploads/2/7/5/8/27584045/srs_watch_on_license_termination_feb_11_2019.pdf

Letter from MOX Services, November 1, 2018, informing NRC of termination of construction activities at the MOX project:

<https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML18305A356>

Aerial photos of the MOX site and other nuclear facilities in South Carolina and Georgia, including VC Summer and Plant Vogtle nuclear projects, December 16, 2018, ©High Flyer:

https://drive.google.com/drive/folders/1Fv2S_NWEbu3q568SIFs2RJyubQqCcO9P

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