

Summary of Fuel Cycle Inspection Findings FY2023

Type	Licensee/ CoC Holder	Description	Applicable Regulation(s)	Performance Area Category
SL IV - NOV	Honeywell Metropolis	While conducting cylinder fill operations, it was determined that the remotely operated valve closing mechanism at the #4 fill spot failed to close the UF6 cylinder valve due to it disconnecting from the closure mechanism. The operations personnel then manually closed the cylinder valve, terminating the whisp/release of material. It was determined that there was no design control over the closure arm mechanism. The lack of design control resulted in fabrication of a closure arm without set screws to be manufactured/used, and inadequate testing/maintenance of the closure arm which only tested the mechanical closure motor, not the arm itself. This is contrary to the licensee's License Application regarding Management Measures and configuration management.	10 CFR 70.61 Performance Requirements 10 CFR 70.62 Safety Program and Integrated Safety Analysis	Operational Safety – Chemical Hazard
SL IV - NOV	Global Nuclear Fuels America	A mass of dry uranium oxide powder greater than expected was identified in the Sinter Test Grinder (STG) swarf collection can prompting a shutdown of the STG. A transient in the plant air system had caused the hatch valves at the bottom of the STG swarf collection enclosure to cycle, resulting in a release of holdup material that had been trapped between the hatch valves. The licensee's investigation found that the bottom hatch valve had been failed closed for some time, including the last two annual cleanouts in 2022 and 2021, resulting in an incomplete cleanout of uranium oxide powder. The licensee's investigation determined that the safety limit could have been exceeded if swarf continued to build up.	10 CFR 70.61 Performance Requirements 10 CFR 70.62 Safety Program and Integrated Safety Analysis	Criticality Safety
SL IV - NCV	Global Nuclear Fuels America	While conducting reviews of personnel dosimetry the licensee identified that a potentially inappropriate algorithm was applied to thermoluminescent dosimeter data for workers in the Ceramics Area. Further review revealed the algorithm significantly undercalculated deep dose equivalent and lens dose equivalent, resulting in inaccurate monitoring of occupational total effective dose equivalent for workers in the affected area.	10 CFR 20.1502 Conditions requiring Individual Monitoring of External and Internal Occupational Dose	Radiation Protection Program - Occupational
SL IV - NCV	Louisiana Energy Services/ URENCO	The licensee implemented inadequate corrective actions during a Root Cause Evaluation and failed to address the root cause with a corrective action to prevent recurrence.	10 CFR 70	Construction

SL IV - NCV	Louisiana Energy Services/ URENCO	Safety controls were unavailable while a crane was being operated within the controlled access area. Prior to operation of a crane within the established "safe distance," visual indication of the "No Swing Zone" and spotters are required. The crane was operated to move and install counterweights on the crane itself contrary to the established work package, and without the required visual indicators or spotters present.	10 CFR 70.61 Performance Requirements 10 CFR 70.62 Safety Program and Integrated Safety Analysis	Construction
SL III - NOV	BWXT	Uranium bearing organic solution was inadvertently transferred into an organic annular storage tank through a partially open valve. The annular tank overflowed. Operators also noticed organic solution in a dropout column coming off a low point in the ventilation ductwork. Two criticality safety item(s) relied-on for safety (IROFS) are supposed to prevent organic solution from getting into the ventilation system, an overflow drain that spills to the floor and an air gap between the top of the organic tank and the ventilation system. Contrary to the design, when the organic tank overflowed, the overflow line contained an intact rupture disk which did not allow solution to flow through it. As a result the solution overflowed through the air gap, and some of the overflowing organic solution was sucked into the ventilation system. IROFS were not designed, implemented, and maintained as necessary to perform their intended safety function as an air gap and overflow line on a uranium bearing vessel. This violation had two examples.	10 CFR 70.61 Performance Requirements 10 CFR 70.62 Safety Program and Integrated Safety Analysis	Criticality Safety
SL IV - NOV	Nuclear Fuel Services	A chemical reaction occurred outside of process containment equipment during inventory cleanout activities from chemical residue containing small quantities of licensed material that had fallen on a protective covering that had been placed on the floor. The Nuclear Fuel Services (NFS's) "Conduct of Operations" procedure instructs personnel not to approach a chemical reaction occurring outside of a process containment and additionally states that only a trained and qualified member of the fire brigade may do so. Contrary to the procedure, following a recommendation from a Fire Brigade member and direction from area supervision, two operators wearing respiratory protection for radiological exposure (not chemical exposure), gathered, and attempted to transfer the chemical residue material from the floor covering. During that transfer a small, short duration flame was observed. Additionally, a strong chemical odor was noted and inhaled by the operators.	Failure to follow License Application	Operational Safety – Chemical Hazard
SL IV - NOV	Nuclear Fuel Services	A chemical reaction occurred outside of process containment equipment during inventory cleanout activities from chemical residue containing small quantities of licensed material that had fallen on a protective covering that had been placed on the floor. Contrary to the procedure, following a recommendation from a Fire Brigade member and direction from area supervision, two operators wearing respiratory protection for radiological exposure (not chemical exposure) approached, gathered, and attempted to	Failure to follow License Application	Operational Safety – Chemical Hazard

		transfer the chemical residue material from the floor covering. During that transfer a small, short duration flame was observed. Additionally, a strong chemical odor was noted and inhaled by the operators. The NFS's "Drafting Safety Work Permits," procedure lists chemical hazards as an example of non-radiological hazards that should be considered in the drafting of any work permits. By not following the chemical safety measures detailed in the "Drafting Safety Work Permits" procedure, all hazards and the personal protective equipment needed were not identified (chemical vapors), and the operators were exposed to the chemical vapors.		
SL IV - NCV	Nuclear Fuel Services	A drain in one of the facility process ventilation systems is credited as an engineered control to prevent the presence of condensation (i.e. moderation). Several instances were discovered where this drain was found in a degraded or failed state during scheduled inspection by the licensee. The drain was fabricated in a way such that the drainpipe protruded into the main ventilation duct rather than being flushed-mounted with the duct as designed, which degraded its intended safety function (i.e. draining condensate or moderator away from the duct). When the degraded condition was discovered, the licensee did not perform corrective actions to ensure that this engineered control was available and reliable to perform its intended function when needed. The failure to establish management measures, particularly corrective actions, resulted in repetitive instances where the drain was found in a state that prevented or degraded its safety function as an IROFS.	10 CFR 70.61 Performance Requirements 10 CFR 70.62 Safety Program and Integrated Safety Analysis	Criticality Safety
SL IV - NCV	Nuclear Fuel Services	A drain in one of the facility process ventilation systems is credited as an engineered control to prevent the presence of condensation (i.e. moderation). Several instances were discovered where this drain was found in a degraded or failed state during scheduled inspection by the licensee. The drain was fabricated in a way such that the drainpipe protruded into the main ventilation duct rather than being flushed-mounted with the duct as designed, which degraded its intended safety function (i.e. draining condensate or moderator away from the duct). Licensee procedure, "Acceptance Form for Major Work Request," provided steps to document verification that the installation of this drain had been inspected and completed satisfactorily. Additionally, the procedure stated, in part, that before closing a work request the initiator must verify that the work has been inspected by a nuclear safety engineer. However, licensee staff marked the work verification as "not applicable" because they believed that this verification would be covered under a separate procedure. The verification never happened and resulted in multiple instances of the engineered control in a failed or degraded state.	Failure to follow License Application	Criticality Safety

SL IV - NOV	Nuclear Fuel Services	<p>On November 10, 2022, during dayshift, an operator-in-training incorrectly installed equipment in Area 200 while conducting preparation activities for special nuclear fuel (SNM) processing. The incorrect equipment installation placed the Area 200 process in an undesired configuration for handling SNM. Subsequently, on the second shift, a trained operator assigned to Area 200 proceeded with routine SNM processing activities in that area. The second shift operator was required to observe the process start-up per Standard Operating Procedure-401-02-302, Revision 052E. However, the operator failed to observe the start-up as directed by the procedure and consequently failed to identify the incorrect equipment configuration established by the dayshift operator. As the start-up process in Area 200 continued, SNM spilled on the process floor as a direct result of the incorrect equipment set up performed by the dayshift operator. The spill did not result in the release of SNM outside the radiologically controlled area or occupational dose above the U.S. Nuclear Regulatory Commission regulatory limits. The Area 200 process was returned to normal operations after corrective actions were completed.</p>	Failure to follow License Application	Operational Safety – Chemical Hazard
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