TEMPORARY INSTRUCTION 2600/003

# OPERATIONAL SAFETY REVIEW

## 2600/003-01 OBJECTIVES

The objectives of this TI are to determine that the regulatee[1] is assuring that:

01.01 Operations at the site are conducted safely.

01.02 The site, structures, equipment, staff, and controls are adequate to protect the health and safety of the workers and members of the general public.

01.03 Operations are being conducted in accordance with regulatory requirements, license (or certificate) commitments, the Safety Analysis Report, and applicable industry codes, standards, and practices.

01.04 The material condition and “as-found” configuration of the site, structures, and equipment, and the documentation and people relied on for safety, are appropriate to protect against undue risk during normal, off-normal, and accident conditions.

## 2600/003-02 BACKGROUND

This temporary instruction (TI) addresses the operational aspects of radiation protection, chemical safety, industrial safety, and fire protection, as they may apply at Nuclear Regulatory Commission (NRC) regulated fuel cycle facilities, It does not address the operational aspects of nuclear criticality safety at these facilities, since they are addressed in Inspection Procedure (IP) 88020 (currently entitled “Regional Nuclear Criticality Safety Program”). This TI restores guidance that was inadvertently omitted when IP 88020 was last modified.

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[1] The term regulatee refers to the licensee or other entity, such as the certificate-holder, in the case of gaseous diffusion facilities, who is operating a facility under NRC regulatory oversight. In addition, in the case of gaseous diffusion facilities, or other former Department of Energy facilities for which there are no licenses, "license" shall indicate the regulatee's documented commitments, as in an application for certification of safe operation, or a compliance plan, regarding NRC requirements.

In this regard, the TI provides guidance for evaluation of a regulatee's conduct of operations at an NRC-regulated fuel cycle facility. This inspection activity is to determine whether the regulatee is operating safely and is in compliance with regulatory requirements and commitments.

2600/003-03 INSPECTION REQUIREMENTS

03.01 Selection of Plant Operations for Inspection

The NRC fuel cycle inspection program, through inspection based on observations of a sampling of various site operations, is intended to ensure that regulatees are operating safely. The inspector should also sample specific aspects of the regulatee's safety program.

Site operation areas and aspects of operations that pose the dominant safety risk (for the types of inspections being conducted), or where there has been found, because of events, or during past inspections, regulatee performance needing improvement in managing safety risks, should be inspected with proportionately greater levels of inspection effort. After a specific area of a facility has been appropriately selected, the inspector may randomly choose aspects of the regulatee's operation in this area for close inspection. This could involve randomly selecting documents (e.g., records, logs, procedures) for review; observing the performance of selected activities; interviewing operators; or selecting surveillance measurements or calculations to be duplicated. The inspector decides which random selections to make and how thoroughly to review the selected areas, depending on how satisfied he/she is that the various aspects of the site's operations are being conducted safely. The inspector can determine the areas of dominant safety risk by reviewing the regulatee's available safety analyses, interviewing regulatee personnel, or by drawing upon the inspector's previous experience and knowledge of safety-significant routine or off-normal events (e.g., event notifications, internal problem reports) that may have occurred in the subject facility or at similar facilities. A review of off-normal events that occurred at the facility since the last inspection, but which were not reported to NRC, also would be appropriate for this purpose. The inspector also may obtain further insight by sharing his/her information and concerns about dominant risk contributors with regulatee personnel, at an entrance meeting, on arrival at the facility, with the lead inspectors in Headquarters or the region, or with the NRC Resident Inspector, if one is assigned to the facility. The regional inspector shall maintain frequent contacts with the assigned NRC project manager (through E-mail, trip reports, or correspondence) to remain current on all relevant regulatory issues regarding the subject facility.

03.02 Depth of Inspection. The depth of inspection for selected operations should be sufficient to provide reasonable assurance that the regulatee is operating the facility safely.

03.03 Conduct of Operations, Site Modifications and Changes, Safety Limits/Limiting Conditions of Operation (LCOs). In performing the following inspection activities, it is important for the inspector to avoid adversely affecting the performance of operations in such a way that the safety of the operation or the facility would be compromised.

a. Observation of Operations

The inspector should observe (to the maximum extent possible) workers performing specific tasks, to determine that the operations are being conducted

safely and in accordance with any applicable approved written procedures. For more difficult or complex tasks, or where there is a known history of safety-significant events at the subject site, or at similar NRC-regulated sites (e.g., filling or moving liquid-filled uranium hexafluroide cylinders), determine the operator's training, qualifications, and job-specific knowledge and skills pertinent to the operation being performed. In addition, evaluate the operator's awareness of the safety aspects of the operation, and the operator's understanding and use of the written procedures applicable to operations being performed. (If a particular task or operation with a recognized safety problem is identified, then the inspector should consider performing a more detailed evaluation in conjunction with the implementation of IP 88010, "Operator Training/Retraining.")

Observe operators' performance to ensure they are adhering to applicable safety procedures, particularly with regard to the adequacy of precautions taken for radiological, chemical, toxicological, and fire protection, and loss of control of nuclear material. (Nuclear criticality safety concerns also are important here, but are already specifically addressed in IP 88020.) The inspector should also be alert to note any conditions that are unsafe, whether or not they are being performed in accordance with approved procedures, regulatory requirements, or license commitments. For example, the inspector may determine that a procedure is inadequate, or that the wrong procedure is being used, or that additional procedures or operator qualifications/training are needed.

The inspector should be aware of generic lessons learned from events at other facilities, and be alert to observe if they were considered at the subject site, or whether the site is vulnerable to the same generic precursor conditions found at other sites where events have occurred. The inspector should review with the licensee relevant regulatee event reports, NRC bulletins, Generic Letters, and Information Notices, related to any identified generic issues.

b. Physical Examinations and Measurements

Observe the physical condition of safety structures, systems, and equipment to ensure availability and reliability of relied upon safety functions. Examples include: making sure drain holes (or tubes) are not plugged; electrical switches or sensors are not corroded; safety valves are not bypassed or inactivated; building fire sprinkler systems and extinguishers have been functionally tested; concentrations of combustible material are consistent with current fire-loading calculations; and the overall condition of systems, structures, and equipment poses no challenges to their operability and availability. Review the appropriate maintenance records or logs to determine if the required maintenance, surveillances, tests, and calibrations have been performed, relative to any suspect equipment.

Observe whether personnel-monitoring devices, protective clothing, and respiratory protection equipment are being used in conformance with Radiation Work Permits (or other similar safety requirement documentation, for a specified task).

c. Site Modification Review and Examination

Observe operations in site areas that are being modified, or have been modified since the previous inspection (subject to the selection process for emphasizing

areas of dominant risk, and where there may be recognized challenges to appropriate regulatee performance). Determine if regulatee documentation exists for analyzing and implementing the modifications, and if appropriate approvals have been made in accordance with the regulatee's controls for implementing modifications. Verify that calibration and functional testing, of new or modified controls or safety related equipment, have been scheduled or completed, before the modification is or has been released. Interview operators in the area where modifications were made, or are in progress, to determine if they understand the basis for the modification and have received training appropriate to the modification.

Determine if operating procedures have been appropriately updated to correspond to the engineered modifications. Determine operators' understanding of new or modified procedures and their implementation, and determine that they have received any required re-training.

Observe new and modified structures and equipment configurations, or the site area being modified, to determine if the safety of any neighboring operating systems containing hazardous material were, or are being, adversely affected through systems interactions.

Ensure that approvals, inspections, and walkdowns required by regulatee safety controls were performed. Ascertain that the regulatee verified, as part of the analysis, that the modification, as implemented, would not and did not result in a lesser level of safety than existed in approved designs before the modification occurred. Determine that the regulatee's Safety Committee performed reviews as required by its procedures. In some cases, depending on conditions, The Office of Nuclear Materials Safety and Safeguards (NMSS) must be notified, or NMSS must approve any changes before operations can continue. Ascertain that the regulatee determined that the change was permitted without notifying NMSS, or that the appropriate NMSS notifications or approvals occurred.

d. Safety Limits and LCOs

Examine structures and equipment and site areas to determine if applicable safety limits and LCOs are adhered to. For example, examine instrumentation and comporting documentation to determine that negative pressures are maintained for rooms or areas with highest contamination potential. Examine liquid-level instrumentation, for storage tanks used for liquid wastes or effluent holdup, to determine the amounts stored (this may be important for liquid effluents that are released based on concentrations and volumes). Determine that safety devices (e.g., filter bank pressure gauges, flow meters, etc.) are operative and within specified safe ranges.

03.04 Housekeeping

During the review of operations, observe any stored combustibles, such as solvents and paints, or any refuse containers containing rags or paper, that may be located in areas where hazardous materials are located, especially in those posted as moderation-controlled areas (for criticality prevention), to determine whether the regulatee's actions are appropriate.

Also examine process areas and equipment to determine if the regulatee is appropriately monitoring and limiting excessive buildup of hazardous material that may accumulate as loose material in process equipment (e.g., fume hoods, glove boxes, or uranium dioxide powder-handling equipment). Ascertain that controls exist for continuous or periodic inventory, cleanup, or recovery of such material.

The inspector should be alert to recognize areas where "hot-work" is in progress (i.e., where the use of welding equipment or other special activities are being conducted that temporarily may significantly increase the potential for a fire or explosion). This is important for the sake of the inspector's own safety, as well as plant safety. In such areas, verify that the immediate area is free of combustible material, a fire watch is posted, the appropriate "hot work" permit is posted, and individuals are aware of any hazardous materials in the area. Verify that requirements of the "hot-work" permit are being met. Similarly, in areas where a radiation work permit may temporarily be required, verify that the radiation work permit is posted, its requirements are appropriate for the activity, and that the requirements of the radiation work permit are being met.

Observe whether cleanup operations are performed when needed (e.g., cleanup of loose feed material) for purposes of limiting contamination and minimizing radiological and toxicological exposure (e.g., as part of a commitment to make the exposures as low as reasonably achievable (ALARA)). Also observe control of containers that may contain hazardous substances, release of which could affect the safety of workers or the safe control of nearby nuclear material. Determine whether operators understand and adhere to procedures for the safe handling and storage of nearby nuclear or hazardous material (other than nuclear material), and understand how its involvement in a fire or explosion could threaten the safe handling of nearby nuclear material. The inspectors should observe whether any ignition sources (e.g., cigarette smoking, welding) could potentially affect the safe control of hazardous liquid or gaseous chemicals. For general housekeeping, observe the safety controls for hazardous or combustible material stored and not in process outside of designated storage areas (e.g., toxic materials, such as acids, located outside of proper storage locations; leakage of acids or other toxic material, such as hydrogen fluoride, from process areas, structures, or equipment). In addition, observe any scrap material or containers found outside of designated areas, such as metal, wood, etc., that could adversely affect emergency ingress or egress, or the operation of fire fighting equipment, if located within areas designated as safe routes. In addition, ignition sources need to be evaluated against the potential combustion sources in the immediate vicinity.

2600/003-04

No Inspection guidance is provided for this TI.

2600/003-05 REPORTING REQUIREMENTS

Inspection findings should be documented and integrated into routine inspection reports. No special inspections, tests, nor data collection need be conducted to comply with this TI. No special report will be required to close this TI.

2600/003-06 INSPECTION FREQUENCY

Inspections under this TI will occur from 2 to 3 times per year, depending on the specific program established for the facility in the Fuel Cycle Master Inspection Schedule.

2600/003-07 EXPIRATION

This TI will remain in effect until September 30, 2005, unless superceded by a permanent inspection procedure. This TI will not be valid after the expiration date.

2600/003-08 RESOURCE ESTIMATE

The resource estimate of 60 hours for completion of the current IP 88020 already includes the resources needed for completion of this TI.

2600/003-09 REFERENCES

10 CFR 70.24(a)(1), (a)(2)

10 CFR 70.41(a)

10 CFR 70.51(e)(1)(I) through (e)(1)(vii)

10 CFR 70.51(f)(2)

Draft Regulatory Guide 3.52, "Standard Format and Content for the Health and Safety Sections of License Applications for Fuel Facilities," November 1986.

Regulatory Guide 3.12

Regulatory Guide 3.13

END