

R

MANAGEMENT MEETING WITH ABB-COMBUSTION ENGINEERING, Inc.
EA No. 96-259 ISSUES

1. Nuclear Criticality Safety Program policies and implementing procedures not fully established or implemented (Findings 1-3, 5, 6, 8, 12, 13, 16, 17, 19, and 22).
2. Nuclear Criticality Safety Evaluation inadequacies (Findings 10, 11, 12, 13, 14, 15).
3. Documentation of compliance to license requirements (Findings 11, 15).
4. Procedure problems (Findings 24-28).
5. Tracking, prioritizing, scheduling, and closeout of audit and inspection findings, and ISA recommendations (Findings 7, 33-35).
6. Change control process (Findings 16-23).

VIOLATIONS, INSPECTOR FOLLOW-UP ITEMS, & UNRESOLVED ITEMS

Based on the results of Inspection Report No. 70-36/96-202, three violations, one unresolved item and five inspector followup items were identified. In addition, several issues related to the criticality safety program that were also identified by licensee audits, reviews and investigations, were reviewed, as summarized below.

Violation 96-202-01: Failure to document a criticality safety evaluation for the 1996 Oxide Conversion Facility modifications, as required by Section 2.6, Operating Procedures (Finding 13).

Violation 96-202-02: Failure of the change control process review procedure to include requirements for the establishment or updating of maintenance, surveillance and functional testing requirements for maintaining criticality controls, as required by Section 2.6, Operating Procedures (Finding 21).

Violation 96-202-05: Failure to properly post or label containers of radioactive material, as required by Section 4.1.6 (Finding 32).

Unresolved Item 96-202-04: Determine whether the training provided to production supervisors constitutes the formal training in criticality control specified in License Section 2.5, Training (Finding 30).

Inspector Follow Item 96-202-03: Review the UO₂ filtration operation and verify that double contingency has been established (Finding 28).

Inspector Follow Item 96-202-06: Review the management approved corrective actions for the Erbia Grinding Station Bulletin 91-01 investigation (Finding 33).

Inspector Follow Item 96-202-07: Review the Oxide Conversion Process ISA Supplement (See Finding 34).

Inspector Follow Item 96-202-08: Review methodology for reporting test failures to management in a timely manner (See Follow-up Item a).

Inspector Follow Item 96-202-09: Review the licensee's actions to address the 1995 Annual Audit findings and recommendations (See Follow-up Item b).

I. FINDINGS

1. The licensee has not established and communicated a Nuclear Criticality safety (NCS) Policy for employees and plant organizations. This is similar to several licensee observations in the last Annual Audit concerning the documentation of commitments and requirements in an auditable manner.
2. Written procedures have not been established to adequately define the interface between operations, nuclear criticality safety, and other operations support functions. This is similar to several licensee observations in the last Annual Audit concerning the documentation of commitments and requirements in an auditable manner.
3. Procedures and guidelines were not always established for routine nuclear criticality specialist function (NCSF) activities, including: (1) the performance of inspections and audits; (2) the format and content of postings; (3) the conduct and documentation of onsite NCS evaluations, and development of NCS limits and controls; and (4) participation in NCS training. This is an NRC observation.
4. The organization and staffing of NCSF does not appear to be adequate to fully support all of the plant needs. This item is similar to a licensee identified recommendation in Section A.8 of the last Annual Audit Report.
5. The licensee has not established a policy or an implementing procedure requirement to have every individual report all detected NCS violations. This item is similar to a licensee identified recommendation in Section A.6 of the last Annual Audit Report.
6. The licensee has not developed a formal policy to assure that area management representatives and NCS staff routinely inspect all areas of the plant to verify that operations are being carried out in a manner consistent with company policy and rules, approved operating procedures and license conditions. This is an NRC observation.
7. There does not appear to be an adequate system to prioritize, track, and closeout the quarterly inspection findings requiring corrective action. This item is similar to a licensee identified recommendation in Section A.6 of the last Annual Audit Report.
8. The licensee has not developed an implementing document to provide guidance for the conduct of criticality safety audits and inspections. This is an NRC observation.
9. The Plant Safety Committee (PSC) is functioning to advise the Vice President on NCS issues. In the past, the licensee has tracked PSC recommendations and followup actions in the meeting minutes. It was difficult to follow management's acceptance or rejection of those recommendations, and the status of followup or corrective actions from those recommendations as the meeting minutes were often terse.
10. The interface between the hazards analysis (HA) performed for the integrated safety analysis (ISA) and nuclear criticality safety evaluations (NCSE) is unclear. The HA was not sufficiently detailed such that an independent reviewer could reconstruct the analysis and the bases for the conditions presented, as required by Section 4.1.3 of the license. At the time of the inspection, the licensee had not established a formal policy or procedure specifying the relationship of the ISA hazard analysis to the license required NCSEs.

This item is similar to a licensee identified recommendation in Section D of the last Annual Audit.

11. NCSE documentation did not always demonstrate that the evaluation was performed to the criteria and standards of the license (as required by Section 2.6). The NCSEs reviewed did not always: (1) consider potential scenarios that could lead to a criticality; (2) provide a summary of the NCS limits and controls; and (3) demonstrate that $K_{eff} < 0.95$ for all abnormal credible operating conditions. This issue is similar to the licensee identified recommendation in Section A.8 of the last Annual Audit.
12. No NCSE guidance has been developed to determine what accident conditions are considered "credible" or "incredible." (This has similar root cause as Finding 11.)
13. The supporting NCSE for the 1996 redesign and replacement of the oxide conversion process reactors was not available during the inspection and apparently does not exist. The failure to document the NCSE for the 1996 Oxide Conversion Process is a Violation (96-202-01) of License Section 4.1.3, Documenting Criticality Evaluations and Reviews.
14. Development of criticality controls based on contingencies and the translation of those controls into operational documents is not formal and comprehensive. This item is similar to licensee identified recommendations in Section A.5
15. Criticality safety evaluations and files were available for only a few of the plant processes. This item is similar to licensee identified recommendations in Section A.8.
16. The functional relationship between QCP-502.4, "Change Control Management," and NIS-216, "Hazard Evaluation," has not been clearly established as to which procedural requirements take precedence over the other and under what circumstances that occurs. This is similar to a licensee identified recommendation in Section D of the Annual Audit.
17. Although both QCP-502.4 and NIS-216 establish preoperational inspection and pre-startup inspection requirements, no guidance for conducting those inspections has been established. Additionally, pre-operational inspections by NCSF are not required. This is similar to licensee identified issues in Section D of the last Annual Audit.
18. There did not appear to be a formal document control system for updating safety-related documents. This is similar to licensee identified recommendations in Sections A.4 and 5 of the Annual Audit.
19. The licensee has not established criteria or guidance in their administrative control procedures for identifying changes that require a license amendment.
20. Section 2.7 of the license requires that the PSC review significant changes to operations affecting criticality safety prior to operations. There did not appear to be any guidance as to how this requirement was formally implemented. This is similar to a licensee identified recommendation in Section A.5 of the last Annual Audit.

21. Neither QCP-502.4 or NIS-216 require the establishment of maintenance or surveillance criteria for engineered controls. The failure of the change control process review procedure to include requirements for the establishment or updating of maintenance, surveillance, and functional testing requirements for maintaining criticality controls is a Violation (96-202-02) of License Section 2.6, Operating Procedures.
22. The licensee has not established a management control system to ensure that all engineered safety equipment is identified and listed in a controlled document (i.e., siphon breaks for backflow prevention in the recovery area) and that the list is maintained up-to-date as the plant is modified. This is similar to issues identified by the licensee in Sections A.5 and D of the last Annual Audit.
23. The plant does not have an adequate NCS configuration control program to maintain the design bases documentation up-to-date. This is similar to a licensee identified recommendation in Section A.8 of the last Annual Audit.
24. The license has not established administrative procedures specifying procedure development and format requirements for plant procedures. This is similar to a licensee identified recommendation in Section E of the last Annual Audit.
25. The license requires that operating procedures be updated at least every two years. The last annual audit performed in March 1996 identified a continuing problem (from the 1995 annual audit) in this area which the licensee is tracking as an open item.
26. The licensee has no formal requirement to have NCSF review new or revised procedures, although they appear to in practice. This is similar to a licensee identified issue in Section A.5 of the last Annual Audit.
27. NCS controls are not always integrated into operating procedures. This issue is similar to a licensee identified recommendation in Section B.(j) of the last Annual Audit.
28. Criteria for sampling and measurement have not been fully established. The review of the UO₂ filtration operation to verify that the double contingency criteria is met is an Inspector Follow Item (96-202-03).
29. There does not appear to be a formal program for training. This is an NRC observation.
30. Additional information is required to determine whether the training provided to production supervisors constitutes the formal training in criticality control specified in License Section 2.5, Training. This is an Unresolved Item (96-202-04).
31. A mechanism is not in place to ensure that maintenance schedules are established and adhered to and are adequate for active NCS controls; that calibration schedules are established for all NCS control systems; and, that the schedules are consistent with license commitments. This is similar to a licensee identified issue for the Bulletin 91-01 root cause analysis.

32. The failure to properly post or label containers of radioactive material is a Violation (96-202-05) of License Section 4.1.6.
33. The findings for the Root Cause Analysis Report for Bulletin 91-01 Report - Erbia Grinding Station had not been thoroughly reviewed and addressed at the time of the inspection. Management corrective actions regarding this issue will be tracked as Inspector Followup Item 96-202-06.
34. The NRC's Fuel Cycle Licensing Branch was not informed of the delay to conduct the ISA for the Oxide Conversion Facility by March 31, 1996, as committed to by the licensee. This issue has been forwarded to the Fuel Cycle Licensing Branch for resolution.

Inspector Followup Item No. 96-202-07 was not listed as a finding, but was opened to track the results of the Oxide Conversion Facility ISA supplement. The supplement was required because the ISA was not based on up-to-date diagrams and facility modifications were ongoing at the time of the review. As a result, the report will be compared to final diagrams and revised accordingly.

35. NIS-216, Hazard Evaluations, Revision 1, Step 9.8, requires that the evaluation team and cognizant management review the analysis document, reach concurrence regarding any recommendation, and establish a documented timetable for implementation. As of May 21, 1996, the licensee's management had not acted on the ISA team's interim recommendations until the issue was identified by the NRC. Once notified, the licensee formed a management team to review and address the ISA recommendations.

II. JUNE 1995 CHEMICAL SAFETY INSPECTION FOLLOW-UP

- a. Oxide Inspection and Alarm Calibration/Testing, O.S. 4101.

Violation 95-201-04 stated that, "no procedure was developed to specify inspection requirements, calibration requirements, and other [functionally test] requirements for the vaporizer chest criticality safety control associated with the steam flow shut-off from the conductivity probe or level monitor."

The inspectors reviewed the revision to O.S. 4101 and determined that acceptable inspection and calibration requirements were specified (closing Violation 95-201-04). However, during review of the test data for an instrument completed during the first quarter of 1996, the inspectors noted that the steam to the vaporizers did not shut off as required. Although this apparent test failure was noted in the data sheets, neither the process engineer or the focused factory manager was notified of the as required by the procedure.

The licensee's representative indicated that they would review the methodology for reporting test failures. This issue will be tracked as Inspector Follow-up Item (96-202-08).

b. Licensee Review of License Condition 4.2.4

License Condition 4.2.4, Special Controls [Nuclear Criticality], (a) through (w), identifies the technical criteria that shall be applied to plant operations. The licensee's March 25, 1996, Reply to a Notice of Violation and Payment of \$12,500 Civil Penalty (EA 96-002), stated "The Hematite Plant Safety Committee has reviewed all of the criticality safety controls listed in section 4.2.4 of the license application to assure that appropriate procedures are in place for such controls.

During the annual criticality safety audit scheduled for the week of March 25, 1996, each condition of Section 4.2.4 will be reviewed."

The inspectors reviewed the 1995 Annual Nuclear Criticality and Radiological Safety Audit, dated April 1, 1996. The audit was conducted on March 25-29, 1996, and covered follow-up items from the previous audit, all of the Section 4.2.4 items, reporting, hazards evaluations, and procedures. The audit comments and findings appeared substantive and insightful. However, at the time of the inspection, the licensee had not conducted a comprehensive management overview to identify potential programmatic issues. Review of the licensee's actions to address the 1995 Criticality Audit will be tracked as Inspector Followup Item 96-202-09.

c. (CLOSED) Inspector Follow-up Item No. 95-201-01.

This IFI was opened to track the removal of combustible material around the anhydrous ammonia tank. The area around the ammonia tanks has been cleared, and a fence has been erected to segregate this area. This item is closed.