



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931

December 30, 2004

Framatome ANP
ATTN: Mr. Ronald J. Land
Plant Manager
2101 Horn Rapids Road
Richland, Washington 99352-5102

SUBJECT: NRC INSPECTION REPORT NO. 70-1257/2004-006

Dear Mr. Land:

This report refers to the inspection conducted from November 29 through December 3, 2004, at the Richland Facility. The purpose of the inspection was to determine whether activities authorized by the license were conducted safely and in accordance with NRC requirements. At the conclusion of the inspection, the findings were discussed with those members of your staff and identified in the report.

Areas examined during the inspection were radiation protection and plant operations. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observation of activities in progress.

Within the scope of the inspection, violations or deviations were not identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and Enclosure 1 will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

As of October 25, 2004, the NRC initiated an additional security review of publicly available documents to ensure that potentially sensitive information is removed from the ADAMS database accessible through the NRC's web site. Interested members of the public may obtain copies of the referenced documents for review and/or copying by contacting the Public Document Room pending resumption of public access to ADAMS. The NRC Public Documents Room is located at NRC Headquarters in Rockville, MD, and may be contacted at (800) 397-4209.

Should you have any questions concerning this letter, please contact us.

Sincerely,

/RA/

David A. Ayres, Chief
Fuel Facility Inspection Branch 1
Division of Fuel Facility Inspection

Docket No. 70-1257
License No. SNM-1227

Enclosure: NRC Inspection Report

cc w/encl:
Thomas Scott Wilkerson, Vice President, Operations
Framatome ANP, Inc.
2101 Horn Rapids Road
Richland, Washington 99352

Charles Perkins, Richland Operations Manager
Framatome ANP, Inc.
2101 Horn Rapids Road
Richland, Washington 99352

Robert E. Link, Manager
Environmental, Health, Safety & Licensing
Framatome ANP, Inc.
2101 Horn Rapids Road
Richland, Washington 99352

Loren J. Maas, Manager
Licensing and Compliance
Framatome ANP, Inc.
2101 Horn Rapids Road
Richland, Washington 99352

cc w/encl: (Cont'd on page 3)

(cc w/encl: cont'd)

Calvin D. Manning, Manager
 Nuclear Criticality Safety
 Framatome ANP, Inc.
 2101 Horn Rapids Road
 Richland, Washington 99352

Gary L. Robertson, Director
 Division of Radiation Protection
 Department of Health, Bldg 5
 PO Box 47827
 7171 Cleanwater Lane
 Olympia, Washington 98504-7827

Distribution w/encl:

D. Ayres, RII
 A. Gooden, RII
 N. Rivera, RII
 C. Taylor, RII
 M. Adams, NMSS
 M. Galloway, NMSS
 M. Baker, NMSS
 PUBLIC

ADAMS: 9Yes 9No Initials: ____
9Publicly Available 9Non-Publicly Available (Draft) 9Sensitive 9Non-Sensitive

PUBLIC DOCUMENT (circle one): YES NO

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| OFFICE | | | | | | | | | |
| SIGNATURE | | /RA/ | | | | | | | |
| NAME | N. Rivera | C. Taylor | | | | | | | |
| DATE | | 12/30/04 | | | | | | | |
| E-MAIL COPY? | YES | NO | YES | NO | YES | NO | YES | NO | YES |

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 70-1257

License No.: SNM-1227

Report No.: 70-1257/2004-006

Licensee: Framatome ANP, Inc.

Facility: Richland Facility

Location: Richland, Washington

Dates: November 29 through December 3, 2004

Inspectors: C. Taylor, Fuel Facility Inspector
N. Rivera, Fuel Facility Inspector

Approved by: David A. Ayres, Chief
Fuel Facility Inspection Branch 1
Division of Fuel Facilities Inspection

Enclosure

EXECUTIVE SUMMARY

Framatome ANP, Inc.
NRC Inspection Report 70-1257/2004-006

This routine, announced inspection was conducted in the areas of radiation protection, plant operations and the status of open items. The inspection involved observation of work activities, a review of selected records, and interviews with plant personnel. The inspection identified the following aspects of the licensee programs as outlined below:

Radiation Protection

- The inspectors determined through random selection that the licensee had instruments and equipment that were operational and had proper alarm settings in accordance with the license application and license procedures. The inspectors determined that a preventative maintenance system was in place to track and identify instruments needing calibration, repair and functional testing (Paragraph 2.a).
- Based on dosimetry results from January 2003 through October 2004, the collective assigned external and internal exposures were well below the licensee's "As Low As Reasonably Achievable" (ALARA) goals and regulatory limits for occupational exposure as specified in 10 CFR 20.1201 (Paragraph 2.b).
- Radiological control practices such as postings, radiological surveys, radiation work permits and labeling met regulatory and license requirements (Paragraph 2.c).
- The licensee had performed periodic audits and evaluations to trend exposure major pathways and was actively pursuing ways to lower exposures. The inspectors determined that training for radiation workers and ALARA evaluations of blended low enriched uranium activities, were adequate (Paragraph 2.d).

Plant Operations

- Plant activities were performed safely and in accordance with license requirements. Procedures provided guidance to the operators for abnormal conditions (Paragraph 3.a).
- Nuclear criticality safety change control and configuration management were adequate. Safety controls reviewed were adequately implemented and maintained (Paragraph 3.b).
- The criticality detectors were adequately tested to ensure reliability and operability (Paragraph 3.c).
- Operators in the process areas were qualified to perform the positions assigned to them. (Paragraph 4.d).
- The licensee's corrective action report was implemented adequately for the tracking and prevention of recurrence of problems (Paragraph 5.e).

Attachment:

List of Persons Contacted

Inspection Procedures Used

List of Items Opened, Closed, Discussed

List of Acronyms

REPORT DETAILS

1. Summary of Plant Status

This report covered the period of November 29 through December 3, 2004. Most fuel manufacturing operations were active during the inspection period. There were no plant upsets or unusual operational occurrences during the inspection.

2. Radiation Protection (Inspection Procedure (IP) 83822)

a. Radiation Protection Equipment

(1) Scope and Observations

The inspectors selected instruments of each major type to verify operability, proper alarm settings and recent calibrations. The inspectors evaluated the preventative maintenance (PM) system by interviewing the staff, reviewing applicable procedures, and cross-checking the licensee's instrument inventory to ensure that instruments were being identified for calibration, repair, and functional testing.

The inspectors observed the calibration stickers and alarm settings of selected instruments during walk-downs of the Uranium Oxide (UO₂) Building, the adjoining blended low enriched uranium (BLEU) addition and the Engineering Laboratory Operations (ELO) Building. The instruments selected included portable survey instruments (alpha, beta, and neutron), counting equipment, continuous air monitors (CAMs), stationary air samplers, pencil dosimeters, and personnel counting monitors (PCMs). The inspectors cross-checked calibration stickers with calibrations' certificates for selected equipment. The inspectors observed that instruments and equipment were in good working condition and backups were available if necessary.

The inspectors interviewed one of the instrumentation supervisors. He explained how the facility tracks radiological instruments and related equipment for calibration and PM. The licensee used a computer-based program that tracked and identified all instruments and equipment for calibration and PM at the facility. Instruments and equipment on the licensee's instrument repetitive maintenance program were categorized. A monthly report was generated followed by a work order for the particular piece of equipment. The inspectors observed that the work order identified the instrument, location, last calibration, calibration procedure and if the equipment was an item relied on for safety (IROFS). The database also tracked the history of repairs and maintenance for each piece of equipment. The inspectors selected instruments from the database and compared it to the licensee's calibration certificates and physical inventory sheets. In general, the certificates and physical identification of the equipment were consistent. The radiological safety office kept an unofficial inventory that was periodically compared to the maintenance database records. No weaknesses were identified.

(2) Conclusions

The inspectors determined that the licensee had instruments and equipment that were operational and had proper alarm setting in accordance with the license application and

license procedures. The inspectors determined that a PM system was in place to track and identify instruments needing calibration, repair and functional testing.

b. External and Internal Exposure Control

(1) Scope and Observations

The inspectors reviewed and discussed with the licensee's representatives occupational and public exposure data to determine if exposures were in compliance with 10 CFR Part 20.1201 and 20.1301 limits, and if controls were in place to maintain occupational doses as low as reasonably achievable (ALARA).

Based on personnel and environmental dosimetry results from January 2003 through October 2004, the collective assigned total effective dose equivalent (TEDE), committed effective dose equivalent (CEDE), deep dose equivalent (DDE), shallow dose equivalent (SDE) and fence line exposures were well below regulatory limits and ALARA goals set for the facility.

For external exposures the licensee's numbers remained steady and far below the regulatory limits, but were expected to increase with the increased handling of the BLEU material and increased workload from upcoming projects. No weaknesses were identified.

(2) Conclusions

Based on dosimetry results from January through October 2004, the collective assigned external and internal exposures were well below the licensee's ALARA goals and regulatory limits for occupational exposure as specified in 10 CFR 20.1201.

c. Surveys, Posting and Labeling

(1) Scope and Observations

The inspectors reviewed radiation work permits (RWPs), radiological surveys, radiological precautions, and general work practices in the UO₂ process area, BLEU addition, and laboratories located in the ELO Building to verify that work was conducted safely and in compliance with regulations and the license application.

During tours of the various areas, the inspectors noted that radiological signs, postings, and RWP procedures were properly posted or readily available. The inspectors observed that instruments used to confine radioactive contamination and airborne radioactivity were in proper working condition. The inspectors observed that proper personal protective clothing and dosimetry were issued and properly worn.

After interviewing the licensee's staff and reviewing the licensee's monthly Health Physics reports and RWPs, the inspectors determined that the licensee's staff was aware and knowledgeable of monthly audits performed by the radiation staff. The licensee's staff was cognizant of the RWPs that were active and current survey maps

were available for inspection. The inspectors reviewed the survey results of several laboratories in the ELO Building and noted no problems with the survey frequency or results. The equipment used to count the samples were calibrated and in good working condition. The licensee's survey instrument inventory was adequate for the types of radiation hazards encountered at the facility. The inspectors observed that survey instruments at the entrance areas of restricted areas were operable and calibrated. No weaknesses were identified.

(2) Conclusions

Radiological control practices such as posting, radiological surveys, radiation work permits and labeling generally met regulatory and license requirements.

d. Implementation of the ALARA Program

(1) Scope and Observations

The inspectors reviewed results of periodic audits to determine if the licensee was trending major contributors to exposures and actively looking for ways of lowering the exposures. The inspectors reviewed the adequacy of training for radiation workers and reviewed ALARA evaluations to determine if the licensee had made modifications for BLEU activities.

The inspectors determined by record review and observations of licensee personnel that the radiation safety staff performed routine monthly audits of plant areas for the purpose of determining compliance with the licensee's procedures and NRC's regulations. The results of the inspection covered a variety of concerns including posting, housekeeping, air sampling, environmental, surveying and instruments. Discrepancies found during the audit were dispositioned in the licensee Radiation Protection Corrective Action Reports, (RPCARs) and tracked via the licensee WebCap System. The inspectors determined that the 2003 Annual ALARA report accurately captured the issues found in the RPCARs and WebCap system.

The inspectors reviewed the licensee's ALARA evaluation of the BLEU facility and determined that adequate radiological controls had been identified and implemented in the BLEU addition. For example, the radiological controls added were additional shielding in the BLEU storage areas, pencil dosimeters and ring badges for all operators, closed containment of the conveyor system that transport moly boats to and from the sintering furnace, continuous air monitors and laminar flow and downdraft systems to help keep airborne radioactivity hazards within regulatory limits. The licensee also identified an increase in radon levels that were continually being monitored. The levels were below the regulatory limits but were above normal for the facility. The licensee continued to investigate the origins and will continue to monitor for elevated readings that may require additional controls. The inspectors interviewed and observed operators in the BLEU facility and noted their radiation training was adequate and their training records were current. There was no weakness identified.

(2) Conclusions

The licensee had performed periodic audits and evaluations that trended the exposures pathways. The inspectors determined that training for radiation workers and ALARA evaluations of BLEU activities were adequate.

3. Plant Operations (IP 88020)

a. Management and Administration Practices, Plant Activities, Emergency Response, and Operating Procedures

(1) Scope and Observations

The inspectors reviewed operational activities and housekeeping associated with the BLEU fuel manufacturing areas to determine if they were being performed safely and in accordance with license requirements. The inspectors observed operations in the ceramic operations fuel manufacturing areas during plant tours including the BLEU areas. The inspectors did not observe any issue where housekeeping could affect emergency egress of the facility. The inspectors observed shift turnover communication between operators and communication between supervisor and operators. No problems were noted.

Criticality safety limit cards and radiological signs were properly posted and available to the operators. Activities were performed safely and in accordance with approved plant procedures. The inspectors verified that nuclear criticality safety (NCS) precautions on abnormal conditions, safety parameters and administrative controls as described in the safety evaluations, and for emergency shutdowns, were included in the procedures. No problems were noted.

(2) Conclusions

Plant activities were performed safely and in accordance with license requirements. Procedures provided guidance to the operators for abnormal conditions.

b. Safety Function, Configuration Control, and NCS Change Control

(1) Scope and Observations

The inspectors reviewed the licensee's change control system for recent facility modifications to verify that safety significant modifications were reviewed, approved, and documented in accordance with the regulatory requirements. The inspectors reviewed four engineering change notices (ECNs) to confirm that modifications to safety systems were adequately controlled, and sufficient reviews were performed prior to installation. The ECN records adequately detailed the extent of the modifications. The inspectors noted that safety related equipment was included in the licensee's Maintenance Management System periodic functional tests were scheduled within the specified frequencies, and the system was adequately implemented and maintained. The inspectors verified that the appropriate functional and calibration tests were performed.

Also, the inspectors verified that procedures were revised when needed. No safety issues were identified.

The inspectors reviewed portions of the criticality safety analysis (CSA) for the BLEU powder preparation process to verify that safety controls were present and maintained in an operable condition. The inspectors verified that procedures included safety parameters and administrative controls as described in the CSA. Selected portions of the process and instrumentation diagrams of the BLEU powder preparation process were reviewed. The inspectors verified that safety controls were identified, implemented and maintained. No significant safety issues were identified.

(2) Conclusions

Nuclear criticality safety change control and configuration were adequate. Safety controls reviewed were adequately implemented and maintained.

c. Criticality Alarm Monitoring System and Maintenance of NCS Control Systems

(1) Scope and Observations

The inspectors reviewed the maintenance and calibration records of the criticality detectors that were located in Room 157 to verify that detectors were tested to ensure reliability and operability. The inspectors reviewed the procedures for the functional test of the detectors and verified that it was performed at the appropriate intervals. The inspectors also reviewed the calibration records for the criticality detectors to ensure that they were performed at the required frequency. No issues were noted.

The inspectors verified that NCS controls in the BLEU areas were identified and adequately maintained through tours of the areas, reviews of the safety analyses, and discussions with the licensee staff. The inspectors also reviewed calibration documents for the safety controls for the BLEU powder preparation area. The inspectors verified that equipment was being properly calibrated, and that adequate records were maintained. No problems were noted.

(2) Conclusions

The criticality detectors were adequately tested to ensure reliability and operability.

d. NCS Training

(1) Scope and Observations

The inspectors verified that operators in the manufacturing areas were trained in the area assigned prior to perform the work. The inspectors reviewed the manpower schedule and training records and determined that the operators were appropriately qualified for the position assigned. Also, the inspectors interviewed the operators to confirm that they were familiarized with the safety controls in their areas. No problems were noted.

(2) Conclusions

Operators in the process areas were qualified to perform the position assigned.

e. NCS Inspection Audits and Investigation

(1) Scope and Observations

The inspectors reviewed the corrective action report and verified the status, the tracking of issues, and the preventive/corrective actions to prevent issues from recurring. The inspectors confirmed that the corrective actions identified were tracked using the licensee's corrective action program. No problems were noted.

(2) Conclusions

The licensee's corrective action report was implemented adequately for the tracking and prevention of recurrence of issues.

f. Follow-up on Previously Identified Issues

(Closed) Violation 70-1257-2002-03-02: Failure to maintain configuration control for criticality safety

This violation concerned the failure to maintain configuration control when the licensee modified a piece of equipment used to handle fissile material by removing an engineered safety feature and allowing the equipment to be returned to service. The licensee identified five corrective actions with a focus on workplace distractions, processing engineering change notices, and improving document control. The inspectors determined that the licensee had completed the commitment to develop a means to routinely identify and address distractions in the workplace. Inspectors' walk-throughs of plant operations did not identify additional deficiencies relative to workplace distractions.

The licensee had a long term corrective action to implement document control improvements scheduled for completion by May 1, 2005. The inspectors verified the status of the new computerized document control system, "Documentum." The documents were being transferred from the "Document Control" system to Documentum. The inspectors verified that the licensee had procedures in place for the migration of the documents. The licensee was maintaining several documents that were accessible on both systems. The inspectors reviewed several documents and verified that no discrepancies were between documents found on each system. This item is closed.

4. Exit Interview

The inspection scope and results were summarized with licensee management on December 2, 2004. Although proprietary documents and processes were occasionally reviewed during this inspection, the proprietary information is not included in this report. Dissenting comments were not received from the licensee.

ATTACHMENT

1. **PARTIAL LIST OF PERSONS CONTACTED**

Licensee

- *R. Burklin, Manager, Radiation Protection
- *J. Deist, Nuclear Criticality Safety
- *B. Doane, Nuclear Criticality Safety
- *R. Link, Environmental, Health, Safety and Licensing Manager
- *L. Maas, Manager, Licensing and Compliance
- *C. Manning, Manager, Criticality Safety
- *T. Longmire, Manager, Training
- *C. Perkins, Manager, Operations
- *T. Tate, Supervisor Radiation Safety
- *L. Stephens, Manager, Ceramics
- *B. Terhark, Manager, Human Resources
- *L. Tupper, Manager, Quality Assurance

*Attended exit meeting on December 2, 2004.

Other licensee employees contacted included engineers, technicians, and office personnel.

2. **INSPECTION PROCEDURES USED**

| | |
|----------|--|
| IP 83822 | Radiation Protection |
| IP 88020 | Regional Nuclear Criticality Safety Inspection Program |

3. **LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

| <u>Item Number</u> | <u>Status</u> | <u>Type</u> | <u>Description</u> |
|--------------------|---------------|-------------|--|
| 70-1257/2002-03-02 | Closed | VIO | Failure to Maintain Configuration Control for Criticality Safety (Paragraph 3.f) |

4. LIST OF ACRONYMS USED

| | |
|-----------------|--|
| ADAMS | Agency-Wide Document Access Management System |
| ALARA | As Low As Reasonable Achievable |
| BLEU | Blended Low Enriched Uranium |
| CAM | Continuous Air Monitor |
| CEDE | Collective Effective Dose Equivalent |
| CFR | Code of Federal Regulations |
| CSA | Criticality Safety Analyses |
| DDE | Deep Dose Equivalent |
| DCF | Dry Conversion Facility |
| ECN | Engineering Change Notices |
| ELO | Engineering Laboratory Operations |
| IP | Inspection Procedure |
| IROFS | Item Relied on for Safety |
| NCS | Nuclear Criticality Safety |
| NRC | Nuclear Regulatory Commission |
| PARS | Publicly Available Records System |
| PCM | Personnel Counting Monitor |
| PM | Preventive Maintenance |
| RPCAR | Radiation Protection Corrective Action Reports |
| RWP | Radiation Work Permit |
| SDE | Shallow Dose Equivalent |
| SNM | Special Nuclear Material |
| TEDE | Total Effective Dose Equivalent |
| UO ₂ | Uranium Oxide |
| VIO | Violation |