



UNITED STATES
NUCLEAR REGULATORY COMMISSION

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

January 23, 2007

Tennessee Valley Authority
ATTN: Mr. Karl W. Singer
Chief Nuclear Officer and
Executive Vice President
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: BROWNS FERRY NUCLEAR POWER PLANT, NOTIFICATION OF
INSPECTION AND REQUEST FOR INFORMATION

Dear Mr. Singer :

On February 26-March 2, 2007 and March 19-23, 2007, the NRC will perform the baseline Public Radiation Safety Inspection at Browns Ferry, (NRC Inspection Procedures 71121.01, 71121.02, 71122.02, and Radiation Safety Sections of 71151 and 60855). Experience has shown that this inspection is resource intensive both for the NRC inspectors and your staff. In order to minimize the impact to your on-site resources and to ensure a productive inspection, we have enclosed a request for documents needed for this inspection. It is important that all of these documents are up-to-date and complete, in order to minimize the number of additional documents requested during the preparation and/or the onsite portions of the inspection. The lead inspector has scheduled a two-day preinspection visit with your staff for February 5-7, 2007. The material requested will be reviewed and collected at that time.

We have discussed the schedule for these inspection activities with your staff and understand that our regulatory contact for this inspection will be Mr. James Wallace of your organization. If there are any questions about this inspection or the material requested, please contact the lead inspector, Ruben Hamilton at (404) 562-4672.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure 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).

Sincerely,

/RA/

Brian R. Bonser, Chief
Plant Support Branch 1
Division of Reactor Safety

Docket Nos.: 50-259, 50-260, 50-296
License Nos.: DPR-33, DPR-52, DPR-68

Enclosure: Pre-Inspection Document Request

cc w/encl:

Ashok S. Bhatnagar
Senior Vice President
Nuclear Operations
Tennessee Valley Authority
Electronic Mail Distribution

Larry S. Bryant, Vice President
Nuclear Engineering &
Technical Services
Tennessee Valley Authority
Electronic Mail Distribution

Brian O'Grady
Site Vice President
Browns Ferry Nuclear Plant
Tennessee Valley Authority
Electronic Mail Distribution

Preston D. Swafford
Senior Vice President
Nuclear Support
Tennessee Valley Authority
Electronic Mail Distribution

General Counsel
Tennessee Valley Authority
Electronic Mail Distribution

(cc w/encl cont'd - See page 3)

(cc w/encl cont'd)

John C. Fornicola, General Manager
Nuclear Assurance
Tennessee Valley Authority
Electronic Mail Distribution

Bruce M. Aukland, Plant Manager
Browns Ferry Nuclear Plant
Tennessee Valley Authority
Electronic Mail Distribution

Robert H. Bryan, Jr., General Manager
Licensing & Industry Affairs
Tennessee Valley Authority
Electronic Mail Distribution

William D. Crouch, Manager
Licensing and Industry Affairs
Browns Ferry Nuclear Plant
Tennessee Valley Authority
Electronic Mail Distribution

Beth A. Wetzel, Manager
Corporate Nuclear Licensing and
Industry Affairs
Tennessee Valley Authority
4X Blue Ridge
1101 Market Street
Chattanooga, TN 37402-2801

State Health Officer
Alabama Dept. of Public Health
RSA Tower - Administration
Suite 1552
P. O. Box 303017
Montgomery, AL 36130-3017

Chairman
Limestone County Commission
310 West Washington Street
Athens, AL 35611

(cc w/encl cont'd - See page 4)

TVA

4

(cc w/encl cont'd)

Masoud Bajestani, Vice President
Browns Ferry Unit 1 Restart
Browns Ferry Nuclear Plant
Tennessee Valley Authority
P. O. Box 2000
Decatur, AL 35609

Robert G. Jones, General Manager
Browns Ferry Site Operations
Browns Ferry Nuclear Plant
Tennessee Valley Authority
P. O. Box 2000
Decatur, AL 35609

Distribution w/encl:

J. Boska, NRR
E. Brown, NRR
L. Raghavan, NRR
RIDSNNRRDIRS
PUBLIC

(ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Brian Bonser, Chief
Plant Support Branch 1
Division of Reactor Safety

Docket Nos.: 50-259, 50-260, 50-296
License Nos.: DPR-33, DPR-52, DPR-68

Enclosure: Pre-Inspection Document Request

cc w/encl:

Ashok S. Bhatnagar
Senior Vice President
Nuclear Operations
Tennessee Valley Authority
Electronic Mail Distribution

Larry S. Bryant, Vice President
Nuclear Engineering &
Technical Services
Tennessee Valley Authority
Electronic Mail Distribution

Brian O'Grady
Site Vice President
Browns Ferry Nuclear Plant
Tennessee Valley Authority
Electronic Mail Distribution

Preston D. Swafford
Senior Vice President
Nuclear Support
Tennessee Valley Authority
Electronic Mail Distribution

General Counsel
Tennessee Valley Authority
Electronic Mail Distribution

(cc w/encl cont'd - See page 3)

PUBLICLY AVAILABLE NON-PUBLICLY AVAILABLE SENSITIVE NON-SENSITIVE

ADAMS: Yes ACCESSION NUMBER: _____

OFFICE	RII:DRS	RII:DRP	RII:DRS				
SIGNATURE							
NAME	HAMILTON	WIDMANN	BONSER				
DATE	1/ /2007	1/ /2007	1/ /2007	1/ /2007	1/ /2007	1/ /2007	1/ /2007
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY

DOCUMENT NAME: C:\FileNet\ML070240255.wpd

Pre-Inspection Document Request

Occupational Radiation Safety Cornerstone

Licensee: Browns Ferry Nuclear Plant
Docket Number(s): 50-259, 260 and 296
Inspection Dates: February 5-7, 2007(bagman), February 26-March 2, 2007 and March 19-23, 2007

Inspection Procedures to be performed:

71121.01 Access Controls to Radiologically Significant Areas (March 2006)
71121.02 ALARA Planning and Controls (March 2005)
71122.02 Radioactive Material Processing and Transportation (March 2005)
71151 Performance Indicator Verification (March 2006)
60855 Operation of an ISFSI (RP aspects) (December 2006)

The most recent inspection completed for the listed inspection procedures was performed is listed in parenthesis. Documentation is requested from the date of the previous inspection to the present.

We would prefer as much of the information as possible in electronic form. An index to the CD contents is also helpful. For those items requesting a list of documents/areas, the inspectors will select documents/areas from the list for on-site review. If any of the requested information is too burdensome to provide electronically or as hard copies during the bagman trip, simply indicate that the requested material is available for onsite review by the inspectors.

If you have any questions, please call Ruben Hamilton at 404-562-4672. Thank you in advance for all your effort in putting together this material.

Assistance Requested During Bagman Trip

- Introductions to, and discussions with, licensee personnel who will be assisting with the inspection
- Plant familiarization "tour"
- Health physics assistance in walk-down of ISFSI

Assistance Requested During On-Site Inspection

- Identification of work activities during the inspection for inspector observations, including notification of pre-job briefings, notification of diving activities, audio/visual surveillance for remote job coverage.
- Health physics assistance in plant walk-downs assessing access controls, e.g. verifying the posting and locking of entrances to HDR-HRA and VHRA, and spent fuel pool controls.
- Health physics assistance in plant walk-downs/job coverage of ongoing outage activities

Enclosure

to assess access controls and ALARA practices.

- Assistance in plant walk-downs of the solid and liquid radwaste processing systems.
- Discussions with appropriate individuals regarding access controls and ALARA planning.
- Schedule of transportation shipments during the inspection and notification of opportunities for observations of shipment preparation/receipt; discussions with appropriate individuals regarding the transportation program.

General Information Request

- Telephone numbers of contacts
- Plant and Radiation Protection organizational charts, including personnel involved in solid radwaste processing and transportation of radwaste/radioactive materials.
- Electronic copy of applicable chapters of UFSAR (e.g. radiation protection program, liquid and solid radioactive waste program, etc.)
- Outage schedule, including work activities to be conducted during the week(s) of the inspection
- List of active radiation work permits, including those specific to outage activities, with their administrative limits, electronic dosimeter dose rate limit, and dose limit.
- List of radiation protection procedures
- Corrective Action Program procedures
- Procedure(s) for identifying, notification, tracking, and correcting PI occurrences.
- List of all Performance Indicators (PIs) and copies of associated corrective action reports for Occupational Exposure Control Effectiveness and RETS/ODCM Radiological Effluent Occurrences
- Audits and self-assessments performed since the last inspection that encompass the areas of (1) access controls, (2) the ALARA program and implementation, (3) liquid and solid radwaste processing, and (4) transportation of radioactive material/radwaste.

60855 Operation of an ISFSI

- Procedures associated with the ISFSI facility. Procedures should include:
 - ▶ Radiological surveys, postings, and radiation control barricades
 - ▶ Environmental monitoring (including TLDs)
 - ▶ Loading of casks
 - ▶ Routine activities
- Radiation surveys of the ISFSI since the last inspection.
- ALARA reviews and planning and associated RWPs for cask loading activities.
- Environmental monitoring results (e.g. TLDs).

Enclosure

- Radiological records for the loading of casks since the last inspection.
- Records of contamination incidents since the last inspection.
- List of corrective action reports generated since the last inspection related to the ISFSI with respect to radiation protection (i.e. access controls, ALARA, contamination, radiation levels, etc.).

71121.01 Access Controls to Radiologically Significant Areas

- Site and corporate procedures associated with the access control program. Procedures should include:
 - ▶ Radiological surveys, postings, and radiation control barricades
 - ▶ Security and control of high radiation sources/objects stored in pools
 - ▶ Radiation Work Permits
 - ▶ Radiological Job-Coverage
 - ▶ Controlling access to High Radiation Areas (HRAs), High Dose Rate High Radiation Areas (HDR-HRAs), and Very High Radiation Areas (VHRAs)
 - ▶ Key controls for all high radiation areas
 - ▶ Radioactive material control, including contamination and hot particles
 - ▶ Dosimetry monitoring (electronic dosimeters, multi-badging, etc.)
 - ▶ Calculations of internal exposures
- List of the 10 most exposure significant work areas within radiation areas, high radiation areas (<1R/hr), or airborne radioactivity areas in the plant. This may include areas with low dose rates but high collective dose. Identify any high radiation areas with significant dose gradients (factor of five or more), including underwater diving activities.
- List of HRAs, LHRAs, HDR-HRAs (>25 rem in one hour @ 30 cm), and VHRAs. Include areas with the potential to become a HRA during routine operations or outages.
- Internal dose assessments, including calculations, for any internal exposures greater than 50 mrem CEDE since the last inspection.
- List of corrective action reports generated since the last inspection related to access controls, including the following:
 - ▶ Access controls, including high radiation area radiological incidents
 - ▶ Radiological events caused by radiation worker errors
 - ▶ Radiological events caused by radiation protection technician errors
- Available for onsite review during inspection:*
 - ▶ Elevation maps with most recent operating and outage radiation survey levels.
 - ▶ RWPs for the top five dose rate areas or tasks.

71121.02: ALARA Planning and Controls

- Site and corporate procedures associated with maintaining site dose ALARA, including those involving ALARA work activities. These procedures should include:
 - ▶ ALARA program implementation, including ALARA committee activities and ALARA planning, briefing, and reviews
 - ▶ Radiation work permit preparation and worker compliance
 - ▶ Processes used to estimate and track work activity specific exposures
 - ▶ Making changes to dose estimates during task performance
 - ▶ Work controls
 - ▶ Engineering controls
 - ▶ Exposure mitigation requirements
- Most recent annual ALARA report and most recent refueling outage report.
- Annual ALARA goals for 2004, 2005, and 2006 and the methodology utilized to make the projections.
- Historic trends and current status of plant source term.
- List approximately 10-15 work activities planned during the inspection likely to result in the highest personnel collective exposures and those which present the greatest radiological risk to workers (e.g. work in HRAs, diving, potentially changing radiological conditions). Include the dose projections and ALARA package numbers.
- ALARA Committee activity summaries (e.g. meeting minutes) for three months or 3 meetings after the last refueling outage and the three months or 3 meetings prior to the upcoming refueling outage.
- Completed ALARA packages (including post-job reviews) for the five work activities that were completed during the last outage which had the greatest collective dose and/or presented significant radiological risk.
- List of five activities (including ALARA package number) from the previous outage in which the work scope changed or was extended and alternative ALARA measures were taken to respond to the emergent conditions.
- List of five activities from the previous outage in which the estimated work hours were significantly different than the actual hours expended. List five activities in which the estimated and actual hours expended were accurate.
- Outline of the source term reduction strategy. Information should include:
 - ▶ Historic trends and current status of plant source term
 - ▶ Factors that affect the source term
 - ▶ Activities employed to reduce the source term
 - ▶ Specific sources identified for reduction actions
 - ▶ Source term reduction evaluation
 - ▶ Results achieved since last inspection
- List of activities since that last inspection that were reviewed for ALARA problems and actions taken to prevent recurrence. Include corrective action report number(s) if

Enclosure

applicable.

- List of corrective action reports generated since the last inspection related to the ALARA program, including the following:
 - ▶ ALARA planning
 - ▶ Post-job review identified problems
 - ▶ Radiation worker practices
 - ▶ Occurrences where the collective exposure was greater than intended dose determined to be ALARA for the individual work activities
- *Available for onsite review during the inspection:*
 - ▶ ALARA planning packages for jobs being performed during the outage
 - ▶ Temporary shielding requests generated for the outage.
 - ▶ Records of personnel monitored for radiation exposure that show the total TEDE to date for each person. If possible, sort individuals by work group.
 - ▶ Records for declared pregnant workers since the last inspection, listing their monthly radiation exposure during the term or year-to-date.

71122.02 Radioactive Material Processing and Transportation

- Site and corporate procedures/manuals describing licensee compliance with 10 CFR Parts 20, 61, and 71 and 49 CFR Parts 170-189. Procedures/manuals should include:
 - ▶ Solid and liquid radwaste processing procedures
 - ▶ Procedure(s) for transferring radioactive waste resin and sludge discharges into shipping/disposal containers.
 - ▶ Waste stream mixing and/or sampling procedures, including (1) waste concentration averaging, (2) use of scaling factors and calculations used to account for difficult-to-measure radionuclides, and (3) ensuring waste stream composition data accounts for changing operational parameters
 - ▶ Shipping/transportation procedures
 - ▶ Cask loading and closure procedures (licensee and vendor) applicable to last three cask transports
- Process Control Program (PCP).
- Most recent Annual Radioactive Effluents Release Report.
- Most recent radio-chemical sample analysis results (i.e., "10 CFR Part 61" analysis) for each of the radioactive waste streams (e.g., dry active waste (DAW), ion exchange resins, mechanical filters, and sludges and activated materials, etc.).
- List and documentation of any changes made to the radioactive waste processing systems (liquid and solid) and/or the PCP since the last inspection and associated 10 CFR 50.59 documentation, as appropriate.

Enclosure

- Copies of applicable transport cask Certificate of Compliance for the last three transport cask shipments.
- Training and qualification records for personnel responsible for radioactive waste processing and radioactive material shipment preparation activities.
- Copy of the Radioactive Shipping Log for the last 12 months. (The inspector will select transportation shipping packages for review during the inspection.)
- List of corrective action reports generated since the last inspection involving radioactive waste and radioactive material/waste transportation.
- Available for onsite review during the inspection:*
 - ▶ Site drawing(s) showing the location of all stored radioactive materials and all stored radioactive waste.
 - ▶ Plant drawings sufficient to permit the inspector to walk-down the liquid and solid radioactive waste processing systems to verify current system configuration/operation agree with the descriptions contained in the UFSAR and in the PCP.
 - ▶ Documentation describing the status of any radioactive waste process equipment that is not operational and/or is abandoned in place.
 - ▶ Information concerning the site's waste disposal volume and waste reduction program.
 - ▶ Training curriculum and primary lesson plans for qualifying persons, including vendors, for radwaste processing, packaging, and making shipments of radioactive materials and radioactive waste as specified by 49 CFR 172.