



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

April 1, 2014

John T. Carlin, Site Vice President
Tennessee Valley Authority
Sequoyah Nuclear Plant
P.O. Box 2000
Soddy Daisy, TN 37384

**SUBJECT: SEQUOYAH NUCLEAR PLANT, NOTIFICATION OF INSPECTION AND
REQUEST FOR INFORMATION**

Dear Mr. Carlin:

During the weeks of May 12 – 16, 2014 and June 2 – 6, 2014, the U.S. Nuclear Regulatory Commission (NRC) will perform a baseline Radiation Safety Inspection at Sequoyah Nuclear Plant, (NRC Inspection Procedures 71124.01, 71124.02, 71124.03, 71124.04, 71124.05, and the Radiation Safety Sections of 71151). In order to minimize the impact to your onsite resources and to ensure a productive inspection, we have enclosed a request for documents needed for this activity. It is important that all of these documents are up-to-date and complete, thereby minimizing the number of additional documents requested during the preparation and/or the onsite portions of the inspection. The NRC requests that these documents be provided to the inspectors in CD format on or before April 28, 2014.

We have discussed the schedule for these inspection activities with your staff and understand that our regulatory contact for this inspection will be Mr. Jon T. Johnson 423-843-8129 of your organization. If there are any questions about this inspection or the material requested, please contact the lead inspector, Ruben Hamilton at 404-997-4672, or the Plant Support Branch 1 Chief, Brian Bonser at 404-997-4653.

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget under control numbers 3150-0044, 3150-0014, 3150-0011, and 3150-0008. The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement, unless the requesting document displays a currently valid Office of Management and Budget control number.

In accordance with Title 10 of the *Code of Federal Regulations* (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 Agency wide Documents Access and Management System (ADAMS), 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. 50-327 and 50-328
License Nos. DPR-77 and DPR-79

Enclosure:
Document Request List

cc: Distribution via Listserv

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OFFICE	RII:DRS/PSB1	RII:DRS/PSB1					
SIGNATURE	RKH1 via e-mail	BRB1					
NAME	R. Hamilton	B. Bonser					
DATE	3/ 31 /2014	3/ 31 /2014					
E-MAIL COPY	YES NO	YES NO					

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Document Request List

Occupational Radiation Safety Cornerstone

Licensee: Sequoyah Nuclear Plant

Docket Number(s): 50-327 and 50-328

Inspection Dates: May 12 – 16, 2014, and June 2 – 6, 2014

Inspection Procedures: 71124.01 Radiological Hazard Assessment and Exposure Controls
71124.02 Occupational ALARA Planning and Controls
71124.03 In-Plant Airborne Radioactivity Control and Mitigation
71124.04 Occupational Dose Assessment
71124.05 Radiation Monitoring Instrumentation
71151 Performance Indicator Verification

Note: Unless specified otherwise, the current version of these documents is expected. Electronic media is preferred if readily available. The preferred file format is MSWord, or searchable “.pdf” files on CDROM. *[Note that the inspectors cannot accept data provided on USB or “flash” drives due to NRC IT security policies.]* To the extent possible, please organize the information in the order shown below. Experience has shown that a poorly organized CD leads to a less efficient inspection and places additional burden on licensee staff. If there are questions regarding the documents requested, please do not hesitate to contact the lead inspector.

Documentation for the inspection procedures from December 7, 2012, to the present is requested for all procedures, except 71124.01 and 71151, should be from November 8, 2013, to present. This reflects the last time particular areas were inspected. 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 inspector will select documents/areas from the list for onsite review.

If you have any questions, please call Ruben Hamilton at 404-997-4672. Thank you in advance for your effort in putting together this material.

Assistance Requested During Onsite Inspection

- Identification of work activities available 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 (HP) assistance in plant walkdowns assessing access controls (e.g., verifying the posting and locking of entrances to high and very high radiation areas (HRA and VHRA), and spent fuel pool (SFP) controls.
- Health physics assistance in plant walkdowns/job coverage of ongoing activities to assess access controls.

Enclosure

- Discussions with appropriate individuals regarding access controls.

Miscellaneous

1. Plant Management, Radiation Protection, and Chemistry organizational charts w/ contact numbers.
2. List of primary contacts for each inspection area with telephone numbers.
3. Updated Final Safety Analysis Report (UFSAR) Chapter 11, "Radioactive Wastes Management" and Chapter 12, "Radiation Protection."
4. List of radiation protection procedures that includes title and number.
5. Outage schedule, including work activities to be conducted during the week(s) of the inspection.
6. Most recent dry active waste (DAW) 10 CFR Part 61 analytical results.
7. Corrective Action Program procedure(s).
8. Procedure(s) for identifying, notification, tracking, and correcting performance indicators (PIs) occurrences.
9. List of all PIs and copies of associated corrective action reports for Occupational Exposure Control Effectiveness and Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual (RETS/ODCM) Radiological Effluent Occurrences.
10. Audits and self-assessments performed since December 7, 2012, that encompass the areas of (1) the As Low As Reasonably Achievable (ALARA) program and implementation, (2) respiratory protection, (3) airborne radioactivity, monitoring and/or mitigation-engineering controls, and (4) radiological monitoring instrumentation (portable, installed, and counting room instruments).

71124.01 – Radiological Hazard Assessment and Exposure Controls

1. List of active Radiation Work Permits (RWPs), including outage RWPs, with their administrative limits, electronic dosimeter dose rate limit, and dose limit.
2. Most recent survey of all Locked HRAs and VHRAs (as applicable).
3. Most recent survey of Independent Spent Fuel Storage Installation (ISFSI) areas.
4. Procedures related to HP controls (e.g., Posting, labeling, surveys, RWPs, contamination control, HRA/LHRA/VHRA control, key control, control of divers, special controls during fuel offload, hot spots, etc.).
5. Procedures related to release of personnel and materials (e.g., release surveys, decontamination, guidance for alarm followup, etc.).
6. List of Nationally Tracked Sources and any change-of-ownership transactions.
7. List of all non-fuel items stored in SFP.
8. All self-assessments and audits covering HP controls since November 8, 2013.
9. List of condition reports (CRs) related to HP controls where the cause was listed as human performance (radworker error) or human performance (HP technician error) issued since November 8, 2013. *[This should be a list of corrective action documents containing a CR number and brief description, not full CRs.]*
10. All CRs related to Nationally Tracked Sources since November 8, 2013.

71124.02 – As Low As Reasonably Achievable Planning and Controls

1. 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.
 - RWP 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.
2. Most recent annual ALARA report and most recent refueling outage report.
 3. Annual ALARA goals for 2013 and 2014, and the methodology utilized to make the projections.
 4. ALARA Committee activity summaries (e.g., meeting minutes) discussing activities associated with the upcoming refueling outage.
 5. 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 December 7, 2012.
 6. List of corrective action reports generated since December 7, 2012, 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.
 7. List of personnel monitored for radiation exposure that shows the total effective dose equivalent (TEDE) to date for each person. If possible, sort individuals by work group. (Please do not provide any records that contain personally identifiable information such as social security number and name on the CD).
 8. Available for onsite review during the inspection:
 - ALARA planning packages for jobs to be performed during the outage.
 - Temporary shielding requests generated for the outage.

71124.03 – In-Plant Airborne Radioactivity Control and Mitigation

1. Site and corporate procedures/manuals associated with airborne radiation monitoring instrumentation and respiratory protection. Procedures/manuals should include:
 - Operation, calibration, and maintenance of air sampling instrumentation, including set-point determination (e.g., low-vols, high vols, goosenecks, AMS 4s, etc.).
 - Calibration and maintenance of portable instruments.
 - Actions to be taken when air sampling instrumentation is found to be significantly out of tolerance/calibration.
 - Issuance and use of respiratory protective equipment (emphasis on self-contained breathing apparatus (SCBA) and air-supplied equipment).
 - Training, including fit-testing, for use of SCBA and supplied-air systems.

- SCBA maintenance activities, including vital components (i.e., regulators).
 - Determination/verification of Grade D air for SCBA.
2. Two most recent HEPA filter dioctyl phthalate (DOP) and charcoal test results or the following ventilation systems:
 - Main Control Room
 - Auxiliary Ventilation Exhaust
 3. Two most recent calibrations for the following Continuous Air Monitoring (CAM) equipment:
 - 0-RE-90-125 and 0-RE-90-205 Main Control Room Air Intake Monitors (Low and High Range).
 - 0-RE-90-102 Fuel Pool Air Space.
 4. Records of certification of air quality for equipment used to provide breathing air for air-supplied respirators and SCBA bottles (air compressors and bottled breathing air) since December 7, 2012.
 5. List of corrective action reports generated since December 7, 2012, involving radiation monitoring and protective equipment deficiencies, including the following:
 - CAMs.
 - Respiratory protection equipment and program implementation.
 6. Available for onsite review by inspector during inspection:
 - Inventory, inspection, and maintenance records for SCBA equipment.
 - Training records, including fit-testing, for SCBA-qualified individuals.
 - Training records/certification for individuals qualified to perform maintenance on vital components (e.g., regulators) on SCBA.

71124.04 – Occupational Dose Assessment

1. Provide Procedures/Guidance Documents for external dose monitoring (i.e., dosimetry issuance and use). The documents should include:
 - Guidance for multi-badging; monitoring in steep/highly variable dose rate gradients.
 - Personnel contamination events; storage/care of personal dosimeters; use of electronic dosimeters including evaluation of any biases identified relative to thermoluminescent dosimeter (TLD) monitoring.
 - Internal dose assessment (i.e., both *in vivo* and *in vitro* bioassay and air sampling capabilities). The documents should include guidance for calibration/quality control (QC) and use of whole body counter (WBC), release of contaminated individuals, use of passive monitoring as screening method for evaluations, and special *in vitro* sample collection and analysis, and actions for declared pregnant workers.
2. National Voluntary Laboratory Accreditation Program (NVLAP) accreditation documentation for current dosimetry used by the site.
3. List of all positive WBC, *in vitro*, or air sampling analyses which resulted in an assigned committed effective dose equivalent (CEDE) equal to or exceeding 10 millirem since December 7, 2012. *[Note: Only a listing should be provided for use by the inspectors to select a sample of issues for in-depth review during the onsite inspection].*
4. List of all personnel contamination events, dispersed contamination/discrete particles, identified since December 7, 2012. *[Note: Only a listing should be provided for use by the inspectors to select a sample of issues for in-depth review during the onsite inspection].*

5. Copies of all audits, self-assessments, and/or reviews related to internal or external dosimetry issues generated since December 7, 2012. The documents provided should include any reviews/evaluations conducted of vendor facilities (e.g., corporate or outside vendor/or corporate calibration facilities).
6. Provide a list of Condition Reporting Problem Evaluation Request (PER) documents generated since December 7, 2012, for internal or external dosimetry issues/events. *[Note: Only titles and a summary statement should be provided for use by the inspectors to select a sample of issues for in-depth review].*

71124.05 – Radiation Monitoring Instrumentation

1. Procedures/Guidance Documents for:
 - Use of portable instrument calibrators (e.g., Shepherd calibrator)
 - Calibration and functional test/source checks of portable radiation detection instrumentation.
 - Calibration and functional tests of small article monitors (SAMs), personnel contamination monitors (PCMs), portal monitors (PMs), whole body counting equipment, and CAMs.
 - Determination of set-points for Area Radiation Monitor (ARM), CAM, PCM, PM, and SAM equipment.
 - Collection and analysis of high-range, post- accident effluent samples.
 - QA program for count room instruments (e.g., laboratory inter-comparison data).
2. The last two calibration records for the following monitors:
 - 0-RE-118 Waste Gas Effluent Noble Gas.
 - 0-RE-90-101B Auxiliary Building Vent Monitor.
 - 1-RE-90-120 /121 Steam Generator Blowdown Liquid Discharge Monitor.
 - 1-RE-90-402 Shield Building Vent Normal/ Accident Range Particulate & Iodine Sampler.
 - 1-RE-90-273, 274 – Lower Containment High Range Area Monitor.
 - WBC systems in Dosimetry.
3. The last two surveillances performed on the Post-accident Sampling System, as applicable.
4. The last two test records of the instrument calibrator (Shepherd validation testing/dose rate curves).
5. List of the portable instruments currently in service and available for use. Several will be selected for onsite review of the calibration records.
6. List of the following radiation monitors currently in service. Several will be selected for onsite review of the calibration records.
 - PMs used in Dosimetry for Passive Monitoring.
 - SAMs at radiological controlled area (RCA) exit point.
 - Whole Body Contamination Monitors at RCA exit point.
 - PMs at RCA exit point.
 - Countroom High-purity Germanium and liquid scintillation systems.
7. Documentation for the radioactive sources used to calibrate the above requested monitors showing traceability to a national standard, National Institute of Standards and Technology (NIST), and traceability to the primary calibration, as applicable.

8. Chart or procedure listing any Emergency Action Level (EAL) value associated with installed or portable radiation monitoring instrument indication(s).
9. Copies of all audits, self-assessments, and/or reviews of area and personnel monitoring equipment, and portable radiation survey instruments generated since December 7, 2012. The records should include any reviews conducted of vendor facilities (e.g., outside calibration laboratories) as applicable.
10. List of CRs generated since December 7, 2012, related to portable instruments, effluent and area monitors, CAMs, RCA release point monitors, WBCs, and count room instruments. *[This should be a list of corrective action documents containing a CR number and brief description, not full CRs.]*

71151 – Performance Indicator Verification

1. Site procedures/manuals for gathering and reporting PI data.
2. Monthly/Quarterly PI reports since November 8, 2013, and copies of associated CRs for any RETS/ODCM Radiological Effluent occurrences.
3. End of calendar year (CY) 2013 liquid and gaseous effluent release permits which specify the monthly, quarterly, and annual curies released by isotope, and associated public dose assessments.
4. List of all corrective action documents since November 8, 2013, using keywords such as: HRA, LHRA, VHRA, unintended dose, unlocked door, etc.
5. List of all electronic dosimeter (ED) dose rate alarms and ED dose alarms since November 8, 2013.
6. List of all corrective action reports generated since November 8, 2013, using keywords abnormal/ unmonitored effluent release, etc.

Inspector Contact Information:

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404-997-4672
ruben.hamilton@nrc.gov

Mailing Address

US Nuclear Regulatory Commission, Region II
ATTN: Ruben Hamilton
245 Peachtree Center Ave., NE
Suite 1200
Atlanta, GA 30303

LIST OF ACRONYMS

ALARA	As Low As Reasonably Achievable
ARM	Area Radiation Monitor
CAM	Continuous Air Monitors
CEDE	Committed Effective Dose Equivalent
CRs	Condition Reports
DAW	Dry Active Waste
EAL	Emergency Action Level
ED	Electronic Dosimeter
HP	Health Physics
HRA	High Radiation Areas
ISFSI	Independent Spent Fuel Storage Installation
NIST	National Institute of Standards and Technology
NVLAP	National Voluntary Laboratory Accreditation Program
PCM	Personnel Contaminate Monitor
PIs	Performance Indicators
PM	Portal Monitor
RCA	Radiological Controlled Area
RETS/OSCM	Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual
RWPs	Radiation Work Permits
SAM	Small Article Monitor
SCBA	Self-contained Breathing Apparatus
SFP	Spent Fuel Pool
TEDE	Total Effective Dose Equivalent
TLD	Thermoluminescent Dosimeter
UFSAR	Updated Final Safety Analysis Report
VHRA	Very High Radiation Areas
WBC	Whole Body Count