NRC FORM 591S PART 1
U.S. NUCLEAR REGULATORY COMMISSION MISION
(8-2002)
10 CFR 2.201

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. LICENSEE/CERTIFICATE HOLDER	2. NRC/REGIONAL OFFICE
Transnuclear, Inc. 7135 Minstrel Way, Suite 300 Columbia, MD 21045 REPORT NUMBER(S) 72-1004/2010-201	Division of Spent Fuel Storage and Transportation U. S. NRC M/S EBB-3D-02M Washington, DC 20555-0001

3. LICENSEE/CERETIFICATE NUMBER(S)	4. INSPECTION LOCATION	5. DATE(S) OF INSPECTION
72-1004	SONGS Mesa Facility, CA	March 8 - 11, 2010

The inspection was an examination of the activities conducted under your Nuclear Regulatory Commission (NRC) approved Quality Assurance Program related to compliance with the NRC's rules and regulations with regard to activities subject to 10 CFR Part 71 and 72. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector. The inspection findings are as follows:

☒ 1. Based on the inspection findings, no violations or nonconformances were identified.

☐ 2. Previous violations(s) or nonconformance(s) closed.

☐ 3. The violation(s), specifically described to you by the inspector as non-cited violations, are not being cited because they were self-identified non-repetitive, and corrective action was or is being taken, and the remaining criteria in the NRC Enforcement Policy, NUREG-1600, to exercise discretion, were satisfied.

_____ Non-Cited Violation(s) was/were discussed involving the following requirement(s) and Corrective Actions(s):

☐ 4 During this inspection certain of your activities, as described below and/or attached, were in violation or nonconformance of NRC requirements and are being cited. This is a NOTICE OF VIOLATION OR NONCONFORMANCE, which may be subject to posting in accordance with 10 CFR19.11.

(Violations, Nonconformances, and Corrective Actions)

STATEMENT OF CORRECTIVE ACTIONS

☐ I hereby state that, within 30 days, the actions described by me to the inspector will be taken to correct the violation(s) identified. This statement of corrective actions I made in accordance with the requirements of 10 CRF 2.201 (corrective steps already taken, corrective steps which will be taken date when full compliance will be achieved). I understand that no further written response to NRC will be required, unless specifically requested; OR

☐ Written Response requested in 30 days ☐ Yes ☐ No

TITLE	PRINTED NAME	SIGNATURE	DATE
LICENSEE	Chris Lloyd		03/11/10
NRC INSPECTOR	Rob Temps		03/11/10

INSPECTOR NOTES COVER SHEET

Licensee/Certificate Holder (name and address)	Transnuclear, Inc. 7135 Minstrel Way Columbia, MD 21045
Licensee/Certificate Holder contact and phone number	Chris Lloyd 410-910-6900
Docket No.	0721004
Inspection Report No.	2010201
Inspection Dates(s)	March 8-11, 2010
Inspection Location(s)	SONGS Mesa Facility, CA
Inspectors	Robert Temps Jim Pearson Clyde Morell
Summary of Findings and Actions	The inspection involved the review and assessment of fabrication activities performed for Transnuclear, Inc. (TN), by Southern California Edison (SCE) at their fabrication facility located at the San Onofre Nuclear Generating Station (SONGS) Mesa facility. At the time of the inspection, fabrication of the 24PT4-DSC design canisters was ongoing for use at SONGS Units 2 and 3. Overall, the team determined that: - The quality of workmanship at the Mesa facility remains high - Fabricated canisters met regulatory design and quality assurance (QA) requirements - Administrative programs such as QA audits, corrective action program, document control, and procurement and supplier audits were performed in accordance with QA program requirements - Proper oversight by TN of fabrication activities was noted; proper communications between TN and SCE as well as SONGS were occurring as required
Lead Inspector Signature/Date	Robert C Temps 03/31/10
Inspector Notes Approval Branch Chief Signature/Date	Maria Garcia Santos acting for Samuel D. Pruett, 3/31/10

Docket Number: 72-1004 Transnuclear, Inc. (TN)
Inspection Reports: 72-1004/2010-201

Licensee/Certificate Holder:

Fabricator: Southern California Edison (SCE)
San Onofre Nuclear Generation Station (SONGS)

Inspection Dates: March 8-11, 2010

Inspectors: Rob Temps, Team Leader, Senior Inspector
Jim Pearson, Senior Inspector
Clyde Morell, Inspector in Training

INSPECTOR NOTES: APPLICABLE SECTIONS OF IP 60852 WERE PERFORMED DURING THE INSPECTION WITH RESULTS DOCUMENTED BELOW:

Inspection Background:

SCE built and operates their own cask fabrication facility located at the Mesa Facility at SONGS. The facility is under contract to TN to perform cask fabrication activities. The facility initially fabricated canisters to the Standardized Advanced NUHOMS System for Unit 1 spent fuel. The Unit 1 fabrication activities were reviewed during the initial NRC inspection of the facility in March 2003. That inspection assessed that, overall, the fabrication facility was doing high quality work. Since that initial inspection, all fabrication work for Unit 1 fuel has been completed. The NUHOMS Advanced System design was amended in 2004 to add a new canister design, designated 24PT4-DSC, licensed to hold spent fuel used by the SONGS operating units (Units 2 and 3). Fabrication of the first batch of 24PT4-DSC canisters was inspected in 2006 and no concerns were identified. The current inspection assessed fabrication of the 24PT4-DSC design.

02.02: Determine whether corrective actions for identified fabrication deficiencies have been implemented in a period commensurate with their significance, and whether nonconformance reports documenting the deficiencies have been initiated and resolved.

The team reviewed the procedures used for problem reporting, reviewed a sample of problem reports, and interviewed personnel responsible for the monitoring and trending of problem reports.

The team determined that the primary procedure used to document fabrication problems is SO23-XXVIII-6.3.10, "Manufacturing Nonconformance Control." The team noted that the procedure provided for appropriate identification and resolution of nonconforming conditions through the issuance of Manufacturing Nonconformance

Reports (MNRs). The team identified that 1) some procedural references were not current, and 2) procedure SO23-XXVIII-6.3.10 stated that MNRs were to be entered into the SONGS Notification System, but instead, they are entered into and controlled through their own system utilizing the software program used for many other site functions including the Notification System (SO23-XXVIII-6.3.10 provides the guidance on how the MNRs are processed within that system). This observation was discussed with TN and SCE personnel and Notification NN200825517 was issued by SCE to document and address the observation through corrections and clarifications in SO23-XXVIII-6.3.10. The team noted that other processes were appropriately used for the identification and resolution of problems noted during material receipt inspections and for supplier/vendor audits. A sampling of various problem reports were reviewed for timeliness and technical adequacy and no concerns were identified. For MNRs that required vendor notification, appropriate communication to and from TN was noted including licensing reviews by TN when required as well as communications by TN to its customer, SONGS.

Overall, the team assessed that SCE was implementing appropriate controls for the identification and resolution of fabrication deficiencies.

02.03: Determine whether individuals performing quality-related activities are trained and certified where required.

The team reviewed portions of SCE procedure SO23-XXVII-7, "ASME Section III Training Program." The procedure described job requirements for certification of personnel performing inspection, examinations, and tests. The team noted that the procedure was developed and implemented to satisfy training and certification requirements defined in the SONGS ASME (American Society of Mechanical Engineers) Quality Assurance (QA) Manual. The team also reviewed portions of procedure SO123-XII-2.10, "Qualification and Certification of Auditing Personnel," and noted that the procedure describes the certification processes for Lead Auditors and various SCE qualified nondestructive examination (NDE) personnel.

The team reviewed SCE Lead Auditor certifications and, based on a sample review of the records, assessed that all lead auditors chosen in the review were qualified and certified acceptably. The team also reviewed samples of receipt inspector's annual evaluation records, ASME mechanical inspector annual evaluation records, and qualifications for ASME III fabrication welders, and no discrepancies were identified.

The team reviewed procedures S0123-V-7.3., "Administrative Controls of Welding, Brazing, and Soldering Performance Qualifications," and SO123-V-7.20.3, "ASME Welder Performance Qualification," and determined they provided adequate requirements regarding qualification and certification of welders. A review of welder qualification records did not identify any concerns. The team also reviewed certification records for NDE personnel, including associated eye exams, and no concerns were identified.

02.04: Determine whether the offsite fabricator's personnel are familiar with the specified design, designated fabrication techniques, testing requirements, and quality controls associated with the construction of the DCSS.

Procedure Use

The program established by SCE at their Mesa cask fabrication facility requires all individuals to verify that each document being used is the latest revision. The team reviewed various documents (i.e., drawings, maintenance orders, and various fabrication, inspection, NDE, and welding procedures) during the inspection and determined that they were adequately identified and controlled and that the documents being used were the correct revisions. Where required, the procedures were available at the various work locations. A sample of documents, reviewed during the inspection, indicated that changes to those documents had been properly reviewed and approved. Overall, the team verified that SCE's program requirements for document control were satisfactorily implemented.

Fabrication Processes

The inspection team determined that procedures and documents used for the fabrication and assembly process were approved and their requirements were satisfactorily implemented. Applicable codes, standards, and drawings were specified and implemented when required. Applicable hold points were identified and implemented. It was also verified that required tools, equipment, and measurement instructions were identified in the above documents, when required.

Special Processes

The team verified that the processes for welding and NDE were properly documented and approved. Welding processes, controlled under weld procedures 8-GT-DSC-308, 8-AGT-DSC-308, and 8-1-GT, met applicable ASME Code requirements. The procedural requirements specified (e.g., base materials, filler metal size and type, amperage, voltage) were satisfactorily implemented. The requirements for the control, issuance, and storage of welding filler material are specified in SONGS procedure SO23-XXVIII-5.5, "Welding Filler Material Control for ASME/AQAM." The team verified that requirements specified in that procedure were implemented as required. The team determined that for the special processes observed during the inspection, required acceptance criteria were met.

The team noted that SCE does not perform lead pouring at the fabrication facility. Instead, they purchase blank lead shielding plugs to the required thickness, and then machine them to size. Prior to the machining process, an ultrasonic (UT) inspection is performed to verify that the lead is free of any rejectable voids. The team reviewed the most recent inspection reports (2UT-003 -08 and 2UT-004-08) for this UT inspection and determined that the inspection was properly conducted in accordance with procedures and met the acceptance requirements. The team reviewed completed

radiographic test (RT) inspection reports against acceptance criteria in procedure SO123-XII-9.401, "Radiographic Examination," and ASME Section III, 1992 edition, addendum NB 5320. The team determined that the RT inspections were conducted in accordance with the aforementioned procedure and acceptance criteria. The team reviewed the RT inspector qualifications and verified that he was certified in accordance with the procedure requirements of SO123-XII-2.16, "Qualification and Certification of NDE Personnel," and ASNT-TC1a. The team also interviewed the RT inspector who performed the more recent RT inspections and determined that the inspector was knowledgeable in the essential elements of the applicable ASME Radiographic Examination procedural requirements.

In summary, the team reviewed RT and UT inspection results and on-going visual inspections. The team determined that NDE inspection requirements were documented, approved, and properly implemented. A review of available records indicated that personnel performing the NDE inspections were qualified and certified.

Test and Inspection

The team reviewed various fabrication procedures and verified that required inspection hold points were placed at appropriate steps, and that the hold point requirements were implemented. No missed hold points were identified in the sample of completed procedures reviewed by the team.

Although no pressure/bubble testing was performed, the team reviewed the applicable procedures related to canister pressure tests: SO23-XXII-9.104, "Helium Leak Detection of Advance Nuhoms 24PT4 Dry Shielded Canisters During Manufacture," and SO23-XII-9.105, "Helium Leak Detection of Advance Nuhoms 24PT4 Dry Shielded Canisters after Fuel Loading and Final Weld Closure." No concerns were identified.

Measuring and Test equipment (M&TE)

The team reviewed documentation supporting the calibration of several sample items listed in the SONGS Test Equipment Management System (STEMS). The team interviewed SCE personnel to determine who was responsible for the issuance and collection of M&TE as well as how shop personnel acquire the equipment for use during dry cask storage system fabrication activities. SCE personnel demonstrated satisfactory knowledge of current controls and calibration for the sample items chosen. Calibration reports, printed from STEMS, listed the standard specification used for calibration. The team noted that, where applicable, the calibration reports also provided information on the functions verified during the calibration process. SCE personnel also described how tools and equipment found to be out of calibration, or nearing a calibration due date, were handled to ensure they are not used until timely re-calibration occurs. The team also noted that the tools and equipment ranges and sensitivities were noted on the calibration reports, as applicable. Overall, the team assessed that the control of M&TE was acceptable.

Overall Observation

Overall, the team assessed that all the SCE fabrication personnel contacted were familiar with the specified design, designated fabrication techniques, testing requirements, and quality controls associated with the construction of the 24PT4-DSC design canisters.

02.05a: Determine whether materials, components, and other equipment received by the fabricator meet DCSS design procurement specifications.

02.05b: Determine whether the procurement specifications conform to the design commitments and requirements contained in the SAR and, as applicable, the CoC or the site-specific license and technical specifications.

The team reviewed procurement procedures, interviewed procurement QA personnel, observed a receipt inspection of purchased goods, reviewed various approved vendor audits, and traced the procurement history of components undergoing fabrication to verify that they were procured from qualified suppliers and met specifications. Several components that were being used in fabrication at the time of the inspection were reviewed for traceability to their purchase order (PO) specifications and design requirements.

Overall, the team concluded that SCE's procurement activities were performed in accordance with their controlling procedures. All the components reviewed were traceable to POs, and the material specifications in the POs were in agreement with those specified in the various material specification documents. Procurement personnel understood the procurement process and related procedures as well as methods used to approve addition of vendors to the list of approved suppliers were appropriate. The audits and surveillances used to qualify and maintain approved suppliers were also assessed to be adequate.

02.06: Determine whether DCSS components are being fabricated per approved QA and 10 CFR Part 21 implementing procedures and fabrication specifications.

The team reviewed SONGS procedure SO123-XXX-3.5, Revision 3, "Evaluation and Reporting of problems to the NRC pursuant to 10 CFR 21." The team also reviewed several material specifications and determined that each referenced Part 21, when required.

02.07a: With regard to fabrication activities, determine whether they are conducted under an NRC-approved QA program (10 CFR 72.140).

Based on the inspection team's review of multiple documents, and observation of fabrication activities, it was determined that fabrication activities were conducted in accordance with the SCE ASME QA Manual and with TN's NRC approved QA program.

02.07b: With regard to fabrication activities, determine whether the provisions of 10 CFR Part 21, "Reporting of Defects and Noncompliance," for reporting defects that could cause a substantial safety hazard have been implemented.

02.07c: With regard to fabrication activities, determine whether the fabricator's personnel are familiar with the reporting requirements of 10 CFR Part 21.

The team reviewed Part 21 postings and discussed the application and reporting of Part 21 items with SCE personnel. SONGS procedure SO123-XXX-3.5 was included with the Part 21 postings. From the reviews and discussions, the team concluded that SCE personnel were familiar with the reporting requirements of 10 CFR Part 21.

02.07d: With regard to fabrication activities, determine whether the fabricator has complied with 10 CFR 21.6, "Posting requirements."

The team reviewed Part 21 postings and determined that they included the complete 10 CFR 21 regulation, the SONGS procedure for handling potential Part 21 occurrences, and a reference to Section 206 of the Energy Reorganization Act of 1974.

02.08a: With regard to quality assurance activities, determine whether the fabricator has been audited by either the licensee or CoC holder.

The team noted that the fabricator had been audited by the CoC holder (TN) in 2007. The team also reviewed a 2009 audit performed by contracted support personnel to provide independence for the QA audited activities. The team noted that the audit covered all of the sections of the SCE ASME QA Program. The checklist for this audit was also reviewed by the team and determined to provide an acceptable description of checklist items, adequate level of detail of verifications for each checklist item, and a detailed listing of audit references, personnel contacted and documents audited. The team noted that each checklist item included any audit findings and a description of the actual assessment process for that portion of the audit.

02.08b: With regard to QA activities, determine whether for selected audits and inspection findings from QA audit or surveillance and/or inspection reports issued in the previous 2 years, the findings were appropriately handled with corrective actions implemented in a period commensurate with their safety significance.

The team reviewed portions of procedure SO23-XXVIII-6.3.5, "ASME QA Audit Planning, Preparation & Documentation," and also reviewed several audits and their associated findings. No concerns were identified with the procedure or the audit reports that were reviewed. Audit findings were all appropriately tracked and resolved.

02.08c: With regard to quality assurance activities, determine whether supervision and quality control/quality assurance personnel perform appropriate oversight during fabrication activities.

The team reviewed samples of both internal audits and surveillances performed of SCE fabrication activities. Both processes provided examples of appropriate oversight by QA personnel. The team also reviewed schedules for the SCE ASME Audit Program for 2008 and 2009. These schedules also included surveillance activities for both years. The team also reviewed the current 2010 audit schedule. The team noted that, overall, SCE was performing the audits/surveillances on schedule.