

NRC FORM 5918 PART 1
(12-2011)
10 CFR 2.201

U.S. NUCLEAR REGULATORY COMMISSION

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. CERTIFICATE/QUALITY ASSURANCE PROGRAM (QAP) HOLDER: Transnuclear, Inc./AREVA 7135 Minstrel Way, Suite 300 Columbia, MD 21045 REPORT NUMBER(S)	2. NRC/REGIONAL OFFICE Headquarters U. S. Nuclear Regulatory Commission Mail Stop EBB-3-D-02M Washington, DC 20555-0001	
3. CERTIFICATE/QAP DOCKET NUMBER(S) 72-1027	4. INSPECTION LOCATION Equipos Nucleares, SA (ENSA) Santander, Spain	5. DATE(S) OF INSPECTION 11/14/2011 - 11/18/2011

CERTIFICATE/QUALITY ASSURANCE PROGRAM HOLDER:


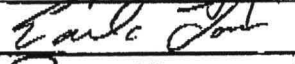

The inspection was an examination of the activities conducted under your QAP as they relate to compliance with the Nuclear Regulatory Commission (NRC) rules and regulations and the conditions of your QAP Approval and/or Certificate(s) of Compliance. The inspection consisted of selective examinations 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 were identified.
- 2. Previous violation(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, to exercise discretion, were satisfied.

 _____ Non-cited violation(s) was/were discussed involving the following requirement(s) and Corrective Action(s):
- 4. During this inspection, certain of your activities, as described below and/or attached, were in violation of NRC requirements and are being cited in accordance with NRC Enforcement Policy. This form is a NOTICE OF VIOLATION, which may be subject to posting in accordance with 10 CFR 19.11.
(Violations and Corrective Actions)

Statement of Corrective Actions

I hereby state that, within 90 days, the actions described by me to the inspector will be taken to correct the violations identified. This statement of corrective actions is made in accordance with the requirements of 10 CFR 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.

TITLE	PRINTED NAME	SIGNATURE	DATE
CERTIFICATE/QAP REPRESENTATIVE	Chris Lloyd - Director of Quality Assurance		1/3/12
NRC INSPECTOR	Earl C. Love		12/30/11
BRANCH CHIEF	Christian J. Araguas		12/30/11

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- 1. Based on the inspection findings, no violations were identified.
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_____ Non-cited violation(s) was/were discussed involving the following requirement(s) and Corrective Actions(s):

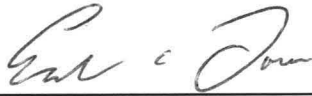
- 4. During this inspection, certain of your activities, as described below and/or attached, were in violation of NRC requirements and are being cited in accordance with NRC Enforcement Policy. This form is a NOTICE OF VIOLATION, which may be subject to posting in accordance with 10 CFR 19.11.
(Violations 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 violations identified. This statement of corrective actions is made in accordance with the requirements of 10 CFR 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.

TITLE	PRINTED NAME	SIGNATURE	DATE
CERTIFICATE/QAP REPRESENTATIVE	Chris Lloyd - Director of Quality Assurance		
NRC INSPECTOR	Earl C. Love		12/30/11
BRANCH CHIEF	Christian J. Araguas		12/30/11

INSPECTOR NOTES COVER SHEET

Licensee/Certificate Holder (name and address)	Transnuclear, Inc. (TN) / AREVA 7135 Minstrel Way, Suite 300 Columbia, MD 21045
Licensee/Certificate Holder contact and phone number	Chris Lloyd Director of Quality Assurance 410-910-6870
Docket No.	72-1027
Inspection Report No.	72-1027/2011-201
Inspection Date(s)	11/14/2011 – 11/18/2011
Inspection Location(s)	Equipos Nucleares, SA (ENSA) Santander, Spain
Inspectors	Earl Love – Safety Inspection Engineer/Team Leader, SFST Robert Temps - Senior Inspector, SFST Jim Pearson - Senior Inspector, SFST
Summary of Findings and Actions	<p>TN/AREVA is under contract with the Peach Bottom facility (owner/operator: Exelon Generation Co., LLC) to fabricate model TN-68 spent fuel casks at the ENSA facility located in Santander, Spain. The inspection was conducted to determine if fabrication activities were performed in accordance with the requirements of 10 CFR Parts 21, 71, and 72, the applicable Certificate of Compliance (CoC), Safety Analysis Report, and TN's Nuclear Regulatory Commission (NRC)-approved Quality Assurance Program (QAP).</p> <p>The inspection verified, through sampling, that spent fuel storage and transportation cask fabrication was being performed in accordance with the CoC, the NRC-approved CoC holder's QAP and NRC regulations.</p> <p>Overall, the team concluded that TN's implementation of its QAP for fabrication activities at ENSA was adequate. ENSA's fabrication processes were assessed to be good. No violations were identified.</p>
Lead Inspector Signature/Date	Earl C. Love  12/30/11
Inspector Notes Approval Branch Chief Signature/Date	Christian J. Araguas  12/30/11 C. Araguas

INSPECTOR NOTES: APPLICABLE PORTIONS OF 02.01 THROUGH 02.08 OF IP 60852 WERE PERFORMED DURING THE INSPECTION WITH RESULTS DOCUMENTED BELOW:

Background:

TN/AREVA is under contract with the Peach Bottom facility (owner/operator: Exelon Generation Co., LLC) to fabricate model TN-68 spent fuel casks at the ENSA facility located in Santander, Spain. The inspection verified, through sampling, that spent fuel storage and transportation cask fabrication was being performed in accordance with the NRC-approved CoC holder's QAP and NRC regulations.

02.01: Determine whether the fabrication specifications are consistent with the design commitments and requirements documented in the Safety Analysis Report (SAR), and, as applicable, the CoC or the site-specific license and technical specifications.

The team focused on the process that ENSA uses to control the translation of vendor supplied design information into controlled ENSA procedures and drawings for fabrication activities.

The team noted that the design development process for TN occurs at its corporate office in Columbia, MD. The team verified the translation of the intended design at the fabrication level and from the corporate design drawings.

The team examined a sample of fabrication specifications to determine if the specifications were consistent with the design commitments and requirements in the TN SAR and the CoC. The review included a sampling of fabrication specifications that dealt with non-destructive examination (NDE) requirements for ENSA personnel. The review was performed to determine adequacy in the NDE area and if ENSA specifications included the design commitments and requirements of the SAR and CoC. Overall, the team did not identify any significant discrepancies between the fabrication specifications and the SAR and CoC.

The team identified components and materials used on the shop floor for fabrication and traced them back to their associated purchase orders and applicable design drawings. In each case, ENSA and TN staff was able to show that the material samples conformed to the requirements of the associated design drawings. Overall, no concerns were identified in the translation of design information into procurement documents and use of materials in the fabrication process.

The team performed a review of ENSA documents and systems to determine if the quality activities performed by ENSA for TN were suitably controlled. The team reviewed document control and record management general procedures (GP 05.02.01, Revision 5, "Preparation, Review, and Approval of Drawings," GP 05.03, Rev. 18, "Preparation, Review, and Approval of Specifications," and GP 18.01, Revision 11, "Records Systems") as well as the applicable sections of the ENSA Quality Assurance Manual (QAM). The team determined that procedural guidance for implementation of the control of procedures and records by ENSA were suitably controlled.

Based on the review noted above as well as interviews with ENSA Quality Engineers, the team determined that ENSA's documentation controls including maintenance and storage of quality records was satisfactory. The process for review, approval and distribution was also discussed and were determined to be satisfactory. The ENSA quality engineers described in detail how procedures and drawings are available for use by the staff and how checks occur by the applicable supervisor, as required, to ensure the proper procedures are being used by shop

personnel. The team reviewed the onsite intermediate record storage vault and the process for capture of quality records and performed a sample review of some quality records to evaluate the level of compliance. The review included samples for Quality, welding and NDE procedures, corrective action documents, drawings, and specifications as well as other correspondences between TN and ENSA as required by TN contract. Overall, the team determined that document and records management controls at ENSA were adequate and no concerns were identified.

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

The team reviewed ENSA's procedures that control the handling and disposition of non-conforming conditions and corrective/preventive actions. General Procedures (GP) reviewed included:

- GP 15.01, Rev. 37, "Handling of Non Conforming Conditions"
- GP 15.05, Rev. 6, "Reporting of Defects and Noncompliances Under 10 CFR 21"
- GP 16.01, Rev. 20, "Corrective/Preventive Actions"
- GP 16.02, Rev. 3, "Root Cause Analysis"

The team noted that procedure GP 15.01 provided adequate guidance for the identification and resolution of non-conformances. In July of 2011 the procedure was revised to eliminate the classification of non-conformances as either an NC (Non Conformity) or a DR (Deviation Report); now, they are all classified as Non Conformance or NCR. The NCR is then evaluated and dispositioned as repair, rework, or use-as-is. When required by contract, as is the case for the TN fabrication activities, customer (TN) approval is required for NCRs whose resolution is "use-as-is" or "repair" when a TN requirement is not met. All NCRs are supplied to TN for information purposes. Requirements for corrective actions were contained in GPs 16.01 and 16.02. GP 16.01 described the process for entering issues into a Corrective Action Report (CAR). Both CARs and NCRs are screened for reportability under 10 CFR 21 and GP 15.05 provides specific instructions should an issue require such reportability.

The team reviewed a sampling of NCRs and CARs associated with TN fabrication activities. No concerns were identified. The team also reviewed corrective actions taken by TN and ENSA in response to the Notice of Violation (NOV) issued as a result of the 2008 NRC inspection at ENSA and documented in inspection report 72-1027/2008-201 (Accession No. ML082950304). Eight non-conformances to Part 72 regulations were cited in the NOV. TN issued eight Supplier Finding Reports (SFRs) to ENSA; one for each non-conformance, and ENSA then entered each SFR into their corrective actions program through the issuance of CARs. The team reviewed the eight SFRs and CARs and determined that overall, TN and ENSA had implemented adequate corrective actions to address the non-compliances cited in the NOV. Several of the SFRs/CARs involved issues with procedures GP 15.01 and 16.01 and the team noted that the current revision of those procedures contained text that adequately addressed the 2008 NOV.

The team performed an in-depth review of an SFR/CAR related to the issue of procurement of threaded inserts (helicoils) that was cited in the 2008 NOV. During the 2008 inspection, the NRC had identified that helicoils were procured by ENSA as non-safety related and from a non-qualified supplier; however, a TN design drawing called for the items to be supplied as safety related. At that time, TN issued SFR No. SF 2008-143 to document the issue and assign responsibility for corrective action to ENSA. ENSA issued CAR-34-08 in response to the SFR.

The team reviewed the actions taken by ENSA and TN to subsequently qualify the helicoil supplier as being able to supply safety related helicoils. A key aspect of the procurement verification process was the ability to verify traceability (heat number) of the wire procured from a sub-supplier for use by the helicoil manufacturer, along with various material hardness testing, and chemical analyses [referred to as certified material test reports (CMTRs)], to verify acceptability of the material. The team reviewed the subsequent supplier and sub-supplier audits and procurement documentation including test results. From its review of the CMTRs and audit reports, the team concluded that the helicoils that were subsequently procured by ENSA were verified to meet TN's requirements in the design drawing as well as TN Specification E-18597, Section 4.3.15, "Threaded Inserts." The team verified with TN that it has no plans to procure additional helicoils in that the quantity already procured is enough to satisfy the planned number of casks to be fabricated at ENSA. The team concluded that overall, ENSA has an adequate corrective action program and that the eight issues cited in the 2008 NOV were adequately addressed. No significant concerns were identified.

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

The team reviewed applicable procedures and records to determine if individuals performing quality-related activities were trained and certified where required. The team sampled training, qualification, and certification records of five welders and four non destructive examiners. In addition, the team reviewed qualification and proficiency records of ENSA quality assurance engineers, receipt inspectors and lead auditors. The team assessed ENSA's implementing procedures (noted below) and reviewed sample qualification records of inspection personnel for compliance to the guidelines defined within American Society for Nondestructive Testing Recommended Practice No. SNT-TC-1A. Overall, qualification and certification of personnel was adequate and no concerns were identified. Procedures reviewed included:

GP 02.01, Revision 14, "Indoctrination, Training, Qualification & Certification of Personnel on Activities on the Quality Area"

GP 02.09, Revision 20, "Training, Qualification & Certification of Personnel"

GP 12.01, Revision 39, "Training, Qualification & Certification of NDE Personnel"

GP 17.01, Revision 15, "Internal Audits"

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

As discussed in 02.01 above, the team obtained a sample of materials in use on the shop floor to evaluate ENSA's material procurement process. The team reviewed numerous purchase orders (POs) of safety related materials for compliance to design and procurement specifications. The team noted each order contained a unique procurement specification. The team compared quality and technical requirements within the specifications for compliance to TN-68 Dry Storage ask Updated Final Safety Analysis Report, Revision 4 and CoC No. 72-1027, Amendment 1. In addition, ENSA weld material purchase order nos. OTN9/902, Revision 02, OTN9/904, Revision 01, and OTN9/902, Revision 00 were evaluated for compliance to their applicable purchase specification.

The team reviewed CMTRs and other quality records associated with the requirements set forth within the purchase orders and associated specifications and noted satisfactory compliance and that the materials were properly received for use in production. In addition, the team noted materials were procured from suppliers who were listed and maintained on ENSA's Approved

Suppliers List (ASL). The team reviewed a sample of supplier audits and the associated ENSA GP 08.06, Revision 13, "Basis for the Qualification of Suppliers," and interviewed the ENSA staff during a demonstration of ENSA's system for controlling the identity and approval of qualified suppliers of materials and/or services. The team reviewed a sample of seven supplier's records and determined they were listed as approved suppliers on the ENSA ASL. The team determined that procurement of safety related components was satisfactory, no concerns were identified.

The team reviewed multiple samples of both internal audits and vendor surveillances and noted that findings had been identified in the documents. The team determined that corrective actions had either occurred, or were set to occur, for those findings. The team noted that audits contained sufficient objective evidence to verify program compliance. In addition, the team reviewed multiple examples of TN's oversight and the method and records of tracking and trending the oversight findings for ENSA. No concerns were noted

The team identified that audit and vendor checklists for the sample of the internal and vendor audits reviewed were comprehensive. The team noted that an adequate audit schedule existed for the 2011 calendar year and that audits were being performed on an on-going basis according to the existing schedule. The team noted that ENSA's internal audit encompassed all the quality criteria's as prescribed within ENSA's QAM and were appropriately assessed within a twelve month interval. The team reviewed the qualifications and certifications for a sample of ENSA Lead Auditors and noted adequate initial qualification, supporting experience, education, and adequate continued proficiency as documented in the ENSA records reviewed. Overall, the team concluded that ENSA internal audit controls were adequate and no concerns were identified.

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 inspection verified, through sampling, that spent fuel storage and transportation cask fabrication was being performed in accordance with the CoC, the NRC-approved CoC holder's QA program, and NRC regulations.

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

The team observed various TN68 components and assemblies within the shop. Specifically, the team observed an Inner Shell (s/n: XTN9-20.00) that required a weld repair to a circumferential weld (FW 13.01). The team noted ENSA's mapping of relevant indications for lack of fusion according to radiographic examination report (XTN9RT004). Upon ENSA and TN assessment of the repair process, the team noted that according to Welding Procedure Specification (WPS) 0TN9WT110, revision, 3, the maximum excavation depth of the weld defects was exceeded. As a result, ENSA stopped work and initiated a NCR (XTN9/003) and CAR (0266/11). The team verified appropriate nonconformance control and corrective action measures to assure design compliance according to ENSA Engineering Product Design, Drawing No. 0TN9.1300, Revision 2, "Shell Flange and Inner Shells Assembly, Welding and Machining."

Prior to the identification of Inner Shell (s/n XTN9-20.00) weld defects, the team reviewed nondestructive magnetic particle (MP) and ultrasonic testing (UT) examination reports that were previously performed in accordance with IPP 20A01, operation nos. 05100 and 05200. The

team noted MP (XTN9MT013) examinations of longitudinal and circumferential welds and UT (XTN9UT002) examination of the bottom-inner-plate to inner-shell weld. The team noted the examinations were performed according to procedures (0TN9CS101 and 0TN9CS201). The team noted that test requirements had been satisfied. No concerns were identified.

In addition, while in the shop the team performed a detailed review of shop traveler XTN9. The purpose of the review was to verify that fabrication and test activities had been satisfactorily accomplished and appropriately documented according to controlled fabrication drawings, procedures and specifications. The team reviewed the traveler for assurance that both TN and Exelon performed oversight activities of pre-defined functional inspection and test activities as defined within the traveler as witness and hold points. The team witnessed the performance of TN's and Exelon inspectors while performing a basket assembly cleanliness inspection as well as basket insertion into a cask assembly. Further, the team reviewed TN fabrication oversight summary reports for those activities important to safety (i.e., fuel compartment test (drag test), welding control, dimensional inspections, outer shell shrink fit, and control of temporary attachments). Lastly, the team reviewed TN and Exelon inspector qualification records and noted appropriate oversight qualifications. Both TN and Exelon simultaneously perform satisfactory oversight as they apply to the design, fabrication, and testing of the spent fuel storage cask. No concerns were identified.

The team viewed radiography films corresponding to production of a circumferential weld noted above (FW13.01) of the inner shell assembly (s/n: XTN9). Prior to viewing the film, in order to verify film density the team noted the use of a densitometer that was calibrated using a national standard step tablet having at least 5 steps with neutral densities. The team noted the density readings did not vary by more than ± 0.05 density units from the actual density stated on the step tablet. In addition, the team verified by film review, lack of fusion, within the zones as documented on the ENSA radiography report noted above.

The team observed welding of threaded studs onto basket assembly (MTN9) and noted compliance to traveler (MTN9/50B04, sequence no. 5591), fabrication drawing (0TN9.2000), and weld procedure (0TN9WT214). In addition, the team reviewed weld record (WR-MTN9/040) to ensure stud welding (FW-20.03.01-168) was controlled and accomplished by a qualified welder (113399). No concerns were noted.

In addition, the team observed basket assembly (MTN9) two nonconformance labels (MTN9/13 and MTN9/14) affixed to the basket. Both nonconformance conditions documented machining deviations from ENSA's fabrication drawing and were under evaluation. The team noted appropriate shop control of the nonconforming basket assembly.

The team witnessed basket insertion into cask (JTN9) as prescribed by traveler (JTN9/50A03, sequence no. 2720). Prior to basket insertion the team visually examined cleanliness of the inner cask cavity. The team verified ENSA's compliance to procedure nos. 0TN9FS502, Revision 7, "Final Cleaning, Painting, and Preparation for Transport" and 0TN9FS501, Revision 0, "General Cleaning Requirements." In lieu of witnessing the basket free path test for this assembly the team examined TN's surveillance performed on cask assembly ITN9. The team verified plate gages used were controlled and calibrated at specified intervals.

The team witnessed weld repair of an outer shell assembly (PTN9) according to traveler TN9/40A01, sequence nos. 5600-6300. The team noted that the indications were identified during in-process inspection and the results recorded on a magnetic particle inspection report (PTN9MT031). The team reviewed weld record (WR-PTN9/036) to ensure welding (FW-

16.19.01-02) was repaired in accordance with applicable procedure and drawings. No concerns were noted.

The team reviewed GP 14.01, Revision 45, "Periodical Calibration of Measuring and Testing Instruments," that provides controls over the use of measuring and test equipment (M&TE) and related calibration records for various tools and equipment used at ENSA's facility. The team compared a sampling of M&TE in current use for TN fabrication activities to the required records requirements of GP 14.01 in the electronic database used for the tracking of M&TE. The team determined that M&TE was being properly tracked and calibrated in the required time intervals. The team identified an observation in that inconsistencies were noted in the manner that M&TE calibration labels and identification markings were applied versus the requirements in GP 14.01. None of the discrepancies affected the validity of the subject M&TE's calibration and TN issued an SFR to ENSA to address the issue. The team concluded that ENSA had adequately implemented M&TE calibration and tracking requirements.

The following equipment was observed and their calibration records reviewed:

- 0600-6241-B Densitometer
- 0100-0122 RT Step Tablet
- 0740-5719-A Welding machine
- 0720-5275 Thermocouple
- 0900-5868 Dynamometer
- 0600-6785 Helium leak standard
- 0900-5236 Hydraulic torque machine
- 0900-5925 Weight scale

02.07: With regard to fabrication activities, determine whether the provisions of 10 CFR Part 21, have been implemented; personnel are familiar with the reporting requirements of 10 CFR Part 21; and compliance with 10 CFR 21.6, "Posting requirements."

ENSA nonconformance reports are screened for reportability under 10 CFR 21 and GP 15.05 provides specific instructions should an issue require such reportability. The team observed postings of 10 CFR Part 21 requirements and noted that the procedure and postings were met.

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

The team examined selected audits and surveillances to determine if ENSA had implemented its quality assurance program with regard to internal audits and if ENSA had been audited, or had surveillances performed, by TN and the licensee. The team noted the presence of oversight representatives from both entities and determined that oversight for the fabrication activities occurring at ENSA was adequate. The team also determined the resulting ENSA corrective actions were implemented in a time frame commensurate with their safety significance.