January 9, 2001

Mr. Robert Grenier, President
Transnuclear West, Inc.
39300 Civic Center Drive, Suite 280
Fremont, CA 94538

SUBJECT: NRC INSPECTION REPORT NO. 72-1004/00-201 AND NOTICE OF VIOLATION

Dear Mr. Grenier:

This letter is in reference to the inspection conducted on November 13-17, 2000, of Transnuclear West Incorporated (TNW) at its offices in Fremont, California, and on November 28-30, 2000, of TNW's oversight of two fabricators in York, Pennsylvania: Precision Components Corporation and Fabrication Products Incorporated. On December 6, 2000, the U.S. Nuclear Regulatory Commission (NRC) conducted an exit meeting by telephone from its Rockville, Maryland, office. The purpose of the inspection was to examine TNW's quality assurance program implementation, corrective action program, and fabrication oversight. Enclosure 1 presents the results of this inspection.

This inspection was an examination of activities as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your certificate of compliance. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC has determined that a Severity Level IV violation of NRC requirements occurred. The violation was evaluated in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600. The current Enforcement Policy is included on the NRC's website at http://www.nrc.gov/OE. The violation is cited in Enclosure 2, Notice of Violation (Notice) and the circumstances surrounding it are described in detail in the subject inspection report. The violation is being cited in the Notice because it was identified by the NRC.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. Additionally, as discussed at the exit meeting, you are requested to keep us informed of your assessment of the cause and corrective actions associated with the failure of ultrasonic examinations to disclose unacceptable inclusions in the welds of three casks being manufactured. For your consideration and convenience, an excerpt from NRC Information Notice 96-28, "Suggested Guidance Relating to Development and Implementation of Corrective Action," is attached as Enclosure 3. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure(s), and your response will be made 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/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Sincerely,
/RA/ original signed by /s/
Susan F. Shankman, Deputy Director
Licensing and Inspection Directorate
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

cc: Service List

Enclosures:
1. Inspection Report No. 72-1004/00-201
2. Notice of Violation
3. NRC Information Notice 96-28, "Suggested Guidance Relating to Development and Implementation of Corrective Action"

Docket No. 72-1004

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/NRC/ADAMS/index.html (the Public Electronic Reading Room).

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Enclosures:
1. Inspection Report No. 72-1004/00-201
2. Notice of Violation
3. NRC Information Notice 96-28, "Suggested Guidance Relating to Development and Implementation of Corrective Action"

Docket No. 72-1004

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U.S. NUCLEAR REGULATORY COMMISSION
Office of Nuclear Material Safety and Safeguards
Spent Fuel Project Office

Inspection Report

Docket No.:	72-1004
Report No.:	72-1004/00-201
Certificate Holder:	Transnuclear West, Inc. 39300 Civic Center Drive, Suite 280 Fremont, CA 94538
Dates:	November 13-17, 28-30, and December 6, 2000
Inspection Locations:	Transnuclear West, Inc. Fremont, CA Precision Components Corporation York, PA Fabrication Products Incorporated York, PA
Inspection Team:	Paul Narbut, SFPO, Team Leader Kirke Lathrop, SFPO, Inspector Robert Temps, SFPO, Inspector
Approved by:	Susan F. Shankman, Deputy Director Licensing and Inspection Directorate Spent Fuel Project Office, NMSS

EXECUTIVE SUMMARY

Transnuclear West Incorporated
NRC Inspection Report No. 72-1004/00-201

The U.S. Nuclear Regulatory Commission (NRC) performed a team inspection at Transnuclear West, Inc. (TNW) corporate offices in Fremont, CA, to examine the areas of design control, fabrication oversight, and management controls with a focus on the quality assurance (QA) program. The objective of the inspection was to verify that activities were performed in accordance with 10 CFR Part 72 and TNW's NRC-approved QA program. The team also assessed TNW fabrication oversight at two fabrication facilities in York, PA: Precision Components Corporation (PCC) and Fabricated Products Incorporated (FPI).

Management Controls

The team concluded that, overall, management controls and implementation of the QA program met regulatory requirements. However, the team identified one violation for TNW's failure to follow their procedure for quarterly trending of corrective action requests. TNW procedures require that apparent causes of problems be binned in specific categories and trended periodically to determine if management-level corrective actions are required. TNW had not performed the quarterly binning and trending required by their procedure for the year 1999. Additionally, the team observed some management control weaknesses that were not violations of regulatory requirements. The most significant weakness was in the process for determining the cause of a problem or deficiency. The team noted that the TNW threshold for performing root cause analysis was very high. For example, in the fabrication area, a cask must have (a) been loaded, (b) violated the certificate of compliance (CoC), and (c) involved a safety issue, to require a root cause analysis. No root cause analyses were performed in 1999 or in 2000 up to the date of the inspection.

Fabrication Controls

The team determined that, overall, TNW fabrication oversight controls met regulatory requirements. The team observed a strong oversight presence at the fabrication shops on the part of both TNW and the Sacramento Municipal Utility District (SMUD), the licensee whose casks were being manufactured at the time. Additionally, the team identified some fabrication control weaknesses that were not violations of regulatory requirements. The most significant weakness was that TNW oversight did not initially identify two fabrication problems:

- Final acceptance ultrasonic examinations of cask confinement welds did not disclose unacceptable inclusions. The conditions were discovered after an inadvertent dropping of a cask during fabrication.
- Two completed, inspected products were delivered to SMUD, but did not meet certain design drawing detail requirements. The problems were identified by SMUD.

Design Controls

The team determined that, overall, TNW design controls met regulatory requirements. However, the team observed a design control weakness that was not a violation of regulatory requirements. Specifically, the fact that the number of calculation errors did not decrease in 1998, 1999, or 2000 showed that the corrective action for calculation errors had not been effective.

As noted above, the team identified a violation of the requirements of 10 CFR Part 72. Table 1 below summarizes information about the violation.

Table 1
Summary of Inspection Findings

Regulatory Requirement 10 CFR Section	Subject of Finding	Number of Findings	Type of Finding [Violation or Nonconformance]	Report Section
72.150	Instructions, procedures, and drawings	1	Violation	2.1.1

INSPECTION PROCEDURES USED

60851, "Design Control of ISFSI Components"
60852, “ISFSI Component Fabrication by Outside Fabricators”

LIST OF ACRONYMS USED

CAR	corrective action report
CFR	Code of Federal Regulations
CoC	certificate of compliance
DSC	dry storage cask
DR	deficiency report
FPI	Fabrication Products Incorporated
ISFSI	independent spent fuel storage installation
NRC	Nuclear Regulatory Commission
PCC	Precision Components Corporation
QA	quality assurance
RA	request for action
SMUD	Sacramento Municipal Utility District
TNW	Transnuclear West Incorporated
UT	ultrasonic examination test
VSC	ventilated storage cask

PERSONS CONTACTED

The team held an entrance meeting on November 13, 2000, to present the scope and objectives of the NRC inspection. On November 17, 2000, the team debriefed TNW management in Fremont, CA, on the issues identified to that point in the inspection. On November 30, 2000, the team debriefed TNW management in York, PA, on the issues identified to that point in the inspection. On December 6, 2000, the NRC held an exit meeting by telephone from Rockville, MD, to present the preliminary findings of the inspection. The people present at the meetings are listed in Table 2.

Table 2 - Entrance/Exit Meeting Attendees

Name	Title	Organization	Entrance Fremont CA 11/13	Debrief, Fremont CA 11/17	Debrief York PA 11/30	Exit Rockville MD 12/6
Jayant Bondre	Engineering Manager	TNW		x		
Gary Butler	President and COO	PCC			x	
Donald Campbell	Senior QA Engineer	TNW	x	x		
Gary Carpenter	Weld Engineer	PCC			x	
Tony Chen	QA Manager	TNW	x	x	x	x*
U. B. Chopra	Licensing Manager	TNW	x	x		
Shanon Christensen	Doc Control Supvsr	TNW	x			
Lewis Detter	Quality Manager	PCC			x	
Jim Field	Fuel Project Manager	SMUD		x	x*	
Clark Fisher	Project Engineer	PCC			x	
Ken Foreman	Program Manager	PCC			x	
Robert Grenier	President and CEO	TNW	x	x		
Robert Grubb	VP of Engineering	TNW	x	x		
Ray Hudleson	Senior QA Engineer	TNW	x	x		x*
Terry Jamison	Surveillance Engr	TNW			x	
Chris Johns	Project Engineer	TNW			x	
Mai Soon Khsim	QA Engineer	TNW				x*
David Krohn	Quality Engineering	PCC			x	
Kirke Lathrop	Inspector	NRC/ SFPO	x	x	x	x
Jim Mackereth	Engineering Manager	PCC			x	
Jan Meyer	QA Vendor Suprvsr	SMUD		x	x*	
Paul Narbut	Team Leader	NRC/ SFPO	x	x	x	x
Gerald O'Farrell	Quality Engineering	PCC			x	
Larry Peterson	Surveillance Engr	TNW			x	
Don Rau	Operations Manager	PCC			x	
Amit Ray	Superv. QA Engr	SMUD			x	
Steve Redeker	Engineer	SMUD			x*	
Dan Rodgers	QA Engineer	TNW		x		x*
Jim Rowlands	NDE Engineer	PCC			x	
Sam Shakir	Project Manager	TNW		x		
Richard Slaten	QA Engineer	SMUD		x*	x*	
Robert Temps	Inspector	NRC/ SFPO	x	x	x	
Michael Tokar	Section Chief,	NRC/ SFPO		x		x
James Walcott	ANI Supervisor	HSB/SMUD			x	
John Walkin	Project Engineer	SMUD			x*	
Joe Witte	Sr. Project Manager	SMUD		x	x*	
Ted Wittig	Project Manager	TNW	x	x	x	

* Participated by telephone

REPORT DETAILS

1. Inspection Scope

The NRC team inspected activities associated with the design and fabrication of dry storage components to determine if they were performed in accordance with the requirements of 10 CFR Parts 21 and 72, the applicable safety evaluation report, and the NRC-approved quality assurance (QA) program.

The team determined the acceptability of dry storage activities by reviewing procedures and instructions, inspecting selected documents, records, and drawings, verifying personnel training and qualifications, and interviewing personnel responsible for various activities. The team reviewed management, design, fabrication, and maintenance controls.

2. Management Controls

2.1 Quality Assurance Program

2.1.1 Observations and Findings

The team determined that overall, implementation of the QA program met regulatory requirements.

The team identified one violation for TNW's failure to follow its procedure for trending corrective action requests. TNW procedure QP16-1, Revision 5, "Condition Reporting and Corrective Action Process," requires that a quarterly trending report be prepared "to identify abnormal patterns, trend information, and Corrective Action Program effectiveness." The team noted that TNW produced a "2nd and 3rd Quarter Trending Report - Sorted by Level," but the report was simply a list of the corrective action reports (CARs) issued during that time. The report did not identify abnormal patterns, trend information, or assess corrective action program effectiveness. The failure to follow procedure requirements is considered a violation of 10 CFR 72.150, "Instructions, procedures, and drawings." At the exit meeting, TNW agreed with the team's finding and issued a request for action (RA), RA-99-0849, to track the actions for this finding.

The team observed a weakness in cause analysis in the TNW corrective action program. The weakness was not a violation of NRC requirements. The team observed that the TNW threshold for performing root cause analysis was very high. For example, in the fabrication area, a cask must have (a) been loaded, (b) violated the CoC, and (c) involved a safety issue, to require a root cause analysis. No root cause analyses were performed in 1999 or in 2000. The team noted that TNW had a second, lower significance level of CARs, requiring that an apparent, not root, cause be determined. The team noted that TNW's apparent cause determination process did not require a narrative description of the apparent cause of problems. Instead, a category from a menu of options is chosen as the apparent cause. Although the TNW process provides a consistent set of categories for binning and trending, a documented apparent cause narrative and analysis may be necessary to understand the cause of the problem, and assess the adequacy of the corrective actions taken. TNW is examining this area and assessing the adequacy of the apparent cause process. TNW wrote RA-99-0864 to track this action.

The team observed a weakness in management controls. The weakness was not a violation, however. The team noted that TNW's set of procedures, called Operating Guidelines, had not been changed to reflect operating practices. The operating guidelines were written as recommended practices rather than requirements and therefore, as such, did not have to be changed. The team noted that nonetheless, not updating the operating guidelines may send the wrong message to TNW staff about management's position on procedure compliance. An example was operating guideline QA-08, Revision 0, "Performance Trending," which recommended that monthly trending reports be published. TNW concluded that the monthly reports were not warranted and stopped doing them in March 2000, but did not change the operating guideline. TNW wrote RA-99-0850 to track resolution of the problem.

2.2 Nonconformance Controls, Documentation Controls, and Audit Program

2.2.1 Observations and Findings

The team determined that overall, nonconformance controls, documentation controls, and the audit program met regulatory requirements.

3. Design Controls

3.1 Design Development

3.1.1 Observations and Findings

The team determined that overall, the design program met regulatory requirements.

The team observed a weakness in the corrective actions for calculation errors. The weakness was not a violation of NRC requirements, however. TNW had identified inaccuracies in design calculations and implemented corrective actions to address the errors. TNW had identified the apparent causes as a lack of attention to detail, data deficiencies, and inadequate reviews. The corrective actions included training in human error reduction and procedure enhancements. The team noted, however, that the corrective actions had not been effective in preventing recurrence of the problem since the number and types of calculation errors had remained relatively constant in 1998, 1999, and 2000. TNW was assessing the problem and had written CAR 00.042 to track its resolution. The team also noted that the lack of improvement in calculation errors was identified in the annual QA report, "QA Program Review and Report - 1999," dated May 17, 2000.

3.2 Design Modifications

3.2.1 Observations and Findings

The team determined that, overall, the design modification controls met regulatory requirements. The team observed that SMUD had identified some configuration problems upon delivery of the first products. TNW had consequently identified the need for improvements at the designer-fabricator interface to better control changes. The configuration problems are described in Section 4.1.1 of this report. TNW wrote CARs 00.051, 00.059, 00.060, and 00.061 to document and track corrective actions for the SMUD-identified problems.

4. Fabrication Controls

4.1 Fabrication and Assembly

4.1.1 Observations and Findings

The team determined that, overall, the fabrication program met regulatory requirements. Additionally, the team determined that, overall, TNW fabrication oversight controls met regulatory requirements. The team observed a strong oversight presence at the fabrication shops on the part of both TNW and SMUD, the licensee whose casks were being manufactured at the time.

Additionally, the team observed some weaknesses that were not violations of regulatory requirements. The most significant weakness was that the TNW oversight process did not initially identify the following two fabrication problems:

- The final acceptance ultrasonic examinations (UT) of cask confinement welds did not disclose unacceptable inclusions. The unacceptable weld conditions were instead identified as a result of a weld reexamination prompted by an inadvertent dropping of a cask during fabrication. The weld involved was the bottom-plate-to-shell weld. TNW wrote CAR 00.069 on the problem and was in the process of determining cause and corrective actions. The team noted that one of the corrective actions was to reexamine the bottom-plate-to-shell welds on all the casks that had been fabricated or were in process of fabrication. TNW subsequently determined that the cask delivered to SMUD was acceptable and did not have any unacceptable inclusions. However, three casks at PCC that had been welded, inspected by UT, and accepted were found to have unacceptable inclusions when reinspected by UT. As an interim corrective action, PCC disqualified the UT examiners involved and subsequently had them requalify. PCC also required that each subsequent UT weld examination be done by the requalified UT technician (Level II examiner) and his supervisor (Level III examiner). The team considered the interim actions taken by TNW and PCC to be adequate for continued fabrication.

- Two completed, inspected products delivered to SMUD did not meet certain design drawing detail requirements. The problems were identified by SMUD inspection at delivery. Examples of the problems with the MP-187 transportation overpack included two missing alignment holes, and two holes counterbored per an upcoming but not-yet-approved design change. The problem with the delivered dry storage cask (DSC) unit was the failure to inspect the guide sleeve dimensions prior to insertion in the basket assembly. TNW wrote CARs 00.059 and 00.060 for the problems. TNW actions to resolve the problem were in process.

Additionally, the team observed a weakness in records review at PCC that TNW oversight had not identified. The team noted that a data package for a basket assembly had been signed off as acceptable by a quality engineer on August 11, 2000. On September 29, 2000, another engineer wrote a deficiency report (DR 38986) which affected the acceptability of the assembly. However, the data package was not amended, reopened, or removed from the accepted bin. Also, the quality engineer who

closed and signed the data package was not informed. PCC management stated that its procedures did not address the need to reopen an accepted package when a deficiency was identified after closure. PCC management issued CAR 00514 to address the issue.

4.2 Material Procurement, Test and Inspection Controls, and Tool and Equipment Control

4.2.1 Observations and Findings

The team determined that overall, material procurement, test and inspection, and tool and equipment controls met regulatory requirements.

5. Exit Meeting

On December 6, 2000, at the conclusion of the inspection, the team held an exit meeting with TNW management to present the preliminary inspection findings. TNW management acknowledged the inspection findings presented by the team. Additionally, when complete, the team requested TNW management inform NRC of its assessment of the cause and corrective actions for with the failure of ultrasonic examinations to disclose unacceptable inclusions in the welds of three casks.

NOTICE OF VIOLATION

Transnuclear West Incorporated Docket No. 72-1004

Fremont, California

During an NRC inspection conducted at Transnuclear West's (TNW's) facilities in Fremont, California, on November 13-17, 2000, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, the violation is listed below:

> 10 CFR 72.150, "Instructions, procedures, and drawings," requires, in part, that the certificate holder prescribe activities affecting quality in documented instructions and procedures, and that these instructions be followed.
>
> TNW procedure QP 16-1, "Condition Reporting and Corrective Action Process," Revision 5, requires a quarterly trending report consisting of an evaluation to identify abnormal patterns, trend information, and corrective action program implementation effectiveness.
>
> Contrary to the above, in the year 1999, TNW, the certificate holder, did not prepare quarterly trending reports consisting of an evaluation to identify abnormal patterns, trend information, and corrective action program implementation effectiveness.

This is a Severity Level IV violation (Supplement VI).

Pursuant to the provisions of 10 CFR 2.201, Transnuclear West Incorporated is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555 with a copy to Susan F. Shankman, Deputy Director, Licensing and Inspection Directorate, Spent Fuel Project Office, Office of Nuclear Material Safety and Safeguards within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made 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), to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room). If personal privacy or proprietary information is necessary to provide an acceptable response, then please

provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.790(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 9th day of January 2001