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Waterford 3

10 CFR 50.73

W3F1-2013-0069

December 17, 2013

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
11555 Rockville Pike
Rockville, MD 20852

Subject: Licensee Event Report (LER) 2013-007-00
Waterford Steam Electric Station, Unit 3 (Waterford 3)
Docket No. 50-382
License No. NPF-38

Dear Sir or Madam:

Entergy is hereby submitting Licensee Event Report (LER) 2013-007-00 for Waterford Steam Electric Station, Unit 3 (Waterford 3). This report provides details associated with a violation of Technical Specifications during dry fuel loading activities within the Spent Fuel Handling Building.

Based on plant evaluation, it was determined that this condition is reportable pursuant to 10 CFR 50.73(a)(2)(i)(B).

This report contains no new commitments. Please contact John P. Jarrell, Regulatory Assurance Manager, at (504) 739-6685 if you have questions regarding this information.

Sincerely,

A handwritten signature in black ink, appearing to read "Jarrell", with a large, stylized loop at the end.

Attachment: Licensee Event Report 2013-007-00

PER

cc: Mr. Marc L. Dapas, Regional Administrator
U.S. NRC, Region IV
RidsRgn4MailCenter@nrc.gov

U.S. NRC Project Manager for Waterford 3
Kaly.Kalyanam@nrc.gov

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NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION (10-2010)		APPROVED BY OMB NO. 3150-0104 EXPIRES 10/31/2013	
LICENSEE EVENT REPORT (LER) (See reverse for required number of Digi./characters for each block)		Estimated burden per response to comply with this mandatory information collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@nrc.gov , and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.	
1. FACILITY NAME Waterford 3 Steam Electric Station		2. DOCKET NUMBER 05000 382	
3. PAGE 1 OF 3			
4. TITLE Technical Specification 3.9.7 Violation, Load Over Irradiated Fuel During Dry Fuel Storage Activities			
5. EVENT DATE		6. LER NUMBER	
MONTH	DAY	YEAR	YEAR SEQUENTIAL NUMBER REV NO
10	18	2013	2013 - 007 - 00
7. REPORT DATE		8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	FACILITY NAME DOCKET NUMBER
12	17	2013	FACILITY NAME DOCKET NUMBER
9. OPERATING MODE Mode 1		11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)	
10. POWER LEVEL 100%		<input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 50.73(a)(2)(i)(C) <input type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 20.2201(d) <input type="checkbox"/> 20.2203(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.73(a)(2)(ii)(B) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 50.36(c)(1)(i)(A) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 50.73(a)(2)(ix)(A) <input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 50.36(c)(1)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(iv)(A) <input type="checkbox"/> 50.73(a)(2)(x) <input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.73(a)(2)(v)(A) <input type="checkbox"/> 73.71(a)(4) <input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 50.46(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(v)(B) <input type="checkbox"/> 73.71(a)(5) <input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(i)(A) <input type="checkbox"/> 50.73(a)(2)(v)(C) <input type="checkbox"/> OTHER <input type="checkbox"/> 20.2203(a)(2)(vi) <input checked="" type="checkbox"/> 50.73(a)(2)(i)(B) <input type="checkbox"/> 50.73(a)(2)(v)(D) Specify in Abstract below or in NRC Form 366A	
12. LICENSEE CONTACT FOR THIS LER			
FACILITY NAME Waterford 3 Steam Electric Station John Jarrell		TELEPHONE NUMBER (Include Area Code) (504) 739-6685	
13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT			
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER REPORTABLE TO EPIX
14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO		15. EXPECTED SUBMISSION DATE	
		MONTH	DAY YEAR
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)			
<p>On October 18, 2013, personnel at Waterford 3 identified that, contrary to Technical Specification (TS) 3.9.7, during dry fuel loading activities in the Fuel Handling Building, with the transfer cask loaded with fuel, a load of over 2000 pounds was placed over the transfer cask with a crane that is not single failure proof. This condition occurred with the irradiated fuel covered with a stainless steel lid, 9.5 inches thick, welded in place covering the fuel.</p> <p>TS 3.9.7 Limiting Conditions of Operation (LCO) requires loads in excess of 2000 pounds to be prohibited from travel over irradiated fuel assemblies in the Fuel Handling Building, except over assemblies in a transfer cask using a single-failure-proof handling system.</p> <p>This condition is reportable under 10 CFR 50.73(a)(2)(i)(B) as an operation or condition prohibited by TS.</p> <p>The procedure governing this activity was changed to require using the single-failure proof handling system of the FHB crane main hook instead of allowing the use of FHB auxiliary hook that is not considered single-failure proof.</p>			

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

U.S. NUCLEAR REGULATORY COMMISSION

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Waterford 3 Steam Electric Station	05000382	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 3
		2013	- 007	- 00	

NARRATIVE

INITIAL CONDITIONS

Waterford Steam Electric Station, Unit 3 (Waterford 3), was operating steady-state in Mode 1, at or near 100% power at the time of discovering the condition, with Dry Fuel Storage (DFS) activities in progress.

EVENT DESCRIPTION

On October 18, 2013, personnel at Waterford 3 identified that, contrary to Technical Specification (TS) 3.9.7, during dry fuel loading activities in the Fuel Handling Building (FHB), with the transfer cask loaded with fuel, a load of over 2000 pounds was placed over the transfer cask with a crane that is not single failure proof. This condition occurred with the irradiated fuel covered with a stainless steel lid, 9.5 inches thick, welded in place covering the fuel.

Since the Dry Fuel Storage Procedure, Stack-UP and Transfer of Loaded MPC (DFS-003-006) did not require the use of the FHB main hook at that time, use of the auxiliary hook was allowed by the procedure to install the 2500 pound transfer cask lid. As a result, the use of a crane that is not single failure proof was used, contrary to TS 3.9.7, during this DFS campaign as well as previous DFS campaigns.

REPORTABLE OCCURRENCE

As a operation or condition prohibited by TS 3.9.7, this condition is reportable under 10 CFR 50.73(a)(2)(i)(B).

BACKGROUND – SYSTEM DESIGN

Waterford 3 is a Combustion Engineering design pressurized water reactor [AC]. The irradiated fuel, after adequately spent and decayed, is transferred from the Spent Fuel Pool using the Holtec HI-STORM 100 Cask Storage System into HI-STORM DFS casks and stored for a time on the DFS concrete pad at the facility site. In this process the fuel is loaded into a Multi-Purpose Canister (MPC) while inside the HI-TRAC transfer cask and underwater in the SFP Cask Loading area. After loading, the HI-TRAC transfer cask is moved from the SFP and the 9.5 inch thick stainless steel lid is installed onto the MPC and welded, covering and containing the irradiated fuel. After the MPC is verified to be sealed and prepared for transporting to the HI-STORM cask for storage, the HI-TRAC transfer cask top lid, weighing approximately 2500 pounds, is lowered into place. It was during this placement of the HI-TRAC transfer cask lid that the single-failure proof crane should have been used.

CAUSAL FACTORS

Based on discussions with personnel associated with the DFS activity, there appeared to have been an erroneous assumption that the 9.5 inch thick MPC lid in place, covering the fuel, would constitute the load as not being over the fuel, similar to the design and license base of the Reactor head being in place covering the irradiated fuel in the reactor vessel. The MPC lid being in place is not credited for allowing these heavy loads over irradiated fuel in the design or license bases.

EXTENT OF CONDITION

The use of a crane that is not single failure proof, occurred contrary to TS 3.9.7, during the DFS campaign associated with this event, as well as previous DFS campaigns.

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NARRATIVE

CORRECTIVE ACTIONS (Ref. CR-WF3-2013-5106 CA-01)

- Dry Fuel Storage Procedure, Stack-UP and Transfer of Loaded MPC (DFS-003-006), was changed to require using the single-failure proof handling system of the FHB crane main hook instead of allowing the use of FHB auxiliary hook that is not considered single-failure proof.
- A review of the DFS procedures was performed to ensure that all lifts over fuel, including the fuel considered covered, which weigh over 2,000 pounds uses the main hook of the FHB crane.

SAFETY SIGNIFICANCE

The safety significance with this event was minimal because of the high capacities of the rigging and hoist used to move the HI-TRAC upper lid cover, which weighs approximately 2,500 pounds, and the MPC 9.5 inch thick lid welded in place covering the fuel.

The auxiliary hook used to place the HI-TRAC lid has a rated capacity of 30,000 pounds. This was load tested during initial installation up to approximately 1.25 times the rating, or 37,500 pounds. The weakest links in the multi-function rigging system that is used for the HI-TRAC upper lid are the safety hoist rings, which have a capacity of 8,000 pounds each. Since four of these are used, the rated capacity of the multi-function rigging system for the HI-TRAC upper lid is 32,000 pounds.

The multi-function rigging system is required to have all components be proof load tested at twice the rated vertical load. For the setup used to move the HITRAC upper lid cover, this would be 64,000 pounds.

The weight of the HI-TRAC upper lid cover was less than 10% of the rated capacities of the equipment used to move the lid, without crediting the tested load capacity of the systems. In addition, the fuel was inside the Multi-Purpose Canister (MPC) with a 9.5 inch thick lid welded in place which would have provided protection from this dropped load, if it had occurred.

SIMILAR EVENTS

A search was performed using the NRC's ADAMS search engine for other similar reported events at Waterford 3 and in the industry. Though an event at H. B. ROBINSON was reported in 1997 (LER #: 97-05-02) identifying the failure to utilize a single-failure proof crane, no similar events were identified where this occurred when incorrectly assumed credit was taken for irradiated fuel being covered by a canister lid, such as while in a fuel transfer cask.

ADDITIONAL INFORMATION

Energy industry identification system (EIS) codes and component function identifiers are identified in the text with brackets [].