



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

February 7, 2020

LICENSEE: Entergy Operations, Inc.

FACILITY: Waterford Steam Electric Station, Unit 3

SUBJECT: SUMMARY OF DECEMBER 11, 2019, PARTIALLY CLOSED PRESUBMITTAL MEETING WITH ENTERGY OPERATIONS, INC., TO DISCUSS THE EFFECT OF A PLANNED LICENSE AMENDMENT REQUEST FOR DIGITAL INSTRUMENTATION AND CONTROL MODIFICATION ON ACCIDENT ANALYSES AT WATERFORD STEAM ELECTRIC STATION, UNIT 3 (EPID L-2019-LRM-0079)

On December 11, 2019, a Category 1 partially closed public meeting was held between the U.S. Nuclear Regulatory Commission (NRC), representatives of Entergy Operations, Inc. (Entergy, the licensee), and Westinghouse Electric Company, LLC (Westinghouse) regarding a planned license amendment request (LAR) for Waterford Steam Electric Station, Unit 3 (Waterford 3). The meeting notice and agenda, dated November 26, 2019, are available in the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML19337B567. The licensee provided a public version of its presentation, which is available at ADAMS Accession No. ML19339J407. A list of attendees is enclosed with this summary.

By letter dated May 16, 2019 (ADAMS Accession No. ML19137A082), the licensee expressed intent to submit an LAR for an upgrade to the digital instrumentation and control (DI&C) system at Waterford 3 in spring 2020. A partial fee waiver was granted for the review of the LAR by letter dated October 30, 2019 (ADAMS Accession No. ML19280C270). A previous presubmittal meeting was held on September 19, 2019. A summary of that meeting is available at ADAMS Accession No. ML19298B918.

The purpose of the December 11, 2019, partially closed meeting was to discuss a particular feature of the planned LAR to replace the core protection calculator (CPC) and control element assembly calculator (CEAC) systems with digital systems in accordance with DI&C Interim Staff Guidance (DI&C ISG)-06, Revision 2, "Licensing Processes," December 2018 (ADAMS Accession No. ML18269A259), using the alternate review process. Specifically, installation of the CPC and CEAC digital systems is anticipated to change the response times related to the calculation of margin for events analyzed in Chapter 15, "Accident Analyses," of the Waterford Updated Final Safety Analysis Report (UFSAR), and impact the safety analysis of record.

During the meeting, Entergy and Westinghouse explained how the CPC system response times were currently calculated. Then, they explained how the replacement of the CPC system with the Common Q digital system would change the response times for the CPC system. Entergy and Westinghouse discussed with the NRC staff their proposed approach to calculate the new CPC and CEAC system response times and provide response time feedback to the core

load analysis to assure that adequate safety margins are maintained in accordance with the safety analysis.

Item D.2.4.1 of DI&C-ISG-06 states, in part, that, "The LAR should demonstrate how the range of response times in the new design falls within the range of response times credited in the accident analysis for the applicable modes of replacement system operation." The licensee stated that Waterford 3's updated core reload safety analyses will not be completed by June 2020, which is the scheduled date for the submittal of the LAR. Therefore, in order to demonstrate that Item D.2.4.1 of DI&C-ISG-06 is met, Entergy and Westinghouse proposed an approach to estimate the impact of modified response times on the safety analysis of record and include those estimated results in the LAR. The licensee will use the process outlined in Title 10 of the *Code of Federal Regulations*, Section 50.59, "Changes, tests, and experiments," to evaluate the new response times and accident analysis impact using the reload methodology prior to new fuel load.

During the proprietary portion of the meeting, Westinghouse demonstrated the proposed approach of estimating response times. Westinghouse used representative examples from a similar Common Q digital system configuration installed at Palo Verde Nuclear Generating Station (Palo Verde), to estimate response times for events such as hot leg temperature variable overpower trip and pressurizer pressure. Westinghouse extrapolated the response time results from Palo Verde to estimate the response times for similar events for the proposed Common Q digital configuration at Waterford 3. Westinghouse determined the impact that these estimated response times would have on the corresponding UFSAR Chapter 15 analyzed events such as steam generator tube rupture or letdown line break. The licensee stated that the LAR would contain the Waterford 3 response times, and not the Palo Verde numbers used for the representative examples.

The licensee provided proprietary results of the demonstration, which showed the safety margin to the acceptance criteria for the UFSAR Chapter 15 analyzed events. The licensee stated that that the response times for the proposed Common Q system would continue to satisfy the UFSAR Chapter 15 acceptance criteria.

The licensee stated that the same approach was employed to update the average and slowest drop times for control element assemblies at Waterford 3. These drop times were approved at Waterford 3 in License Amendment No. 246, dated November 13, 2015 (ADAMS Accession No. ML15289A143).

During the meeting, the NRC staff acknowledged that alternate approaches have been included in previous LARs for review. The NRC staff stated that such an approach for Waterford 3, when included in the proposed LAR, would likely provide sufficient technical information to begin the review of the LAR.

In addition, the NRC staff clarified that although the licensee references a Palo Verde modification as a precedent, the licensee cannot take credit for the NRC staff's evaluation of the Palo Verde modification without demonstrating why the basis is the same for the Waterford modification. The NRC staff stated that the LAR should include information that demonstrates how the Waterford 3 modification complies with the regulatory criteria and conforms with the regulatory guidance.

No regulatory decisions were reached at this meeting. No members of the public attended the meeting. No Public Meeting Feedback forms were received.

Please direct any inquiries to me at 301-415-1390 or April.Pulvirenti@nrc.gov.

April L. Pulvirenti, Project Manager */RA/*
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosure:
List of Attendees

cc: Listserv

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ADAMS Accession No.: ML20013G259

OFFICE	DORL/LPL4/PM	DORL/LPL4/LA	NRR/DEX/EICA/BC	NRR/DEX/EICB/BC
NAME	APuvirenti	PBlechman	JJohnston	MWaters
DATE	01/23/2020	01/15/2020	02/03/2020	02/03/2020
OFFICE	NRR/DSS/SNSB/BC(A)	DORL/LPL4/BC	DORL/LPL4/PM	
NAME	JBorromeo	JDixon-Herrity	APulvirenti	
DATE	01/15/2020	02/07/2020	02/07/2020	

OFFICIAL RECORD COPY

LIST OF ATTENDEES

DECEMBER 11, 2019, PARTIALLY CLOSED PRESUBMITTAL MEETING WITH

ENTERGY OPERATIONS, INC

WATERFORD STEAM ELECTRIC STATION, UNIT 3

U.S. Nuclear Regulatory Commission

Rossnyev Alvarado
Steven Arndt
Robert Beaton
Joshua Borromeo
Paul Clifford
Samir Darbali
Jeanne Johnston
Angel Moreno
William Orders
April Pulvirenti
Richard Stattel
Michael Waters
Jack Zhao

Entergy Operations, Inc.

Jacob Champaign
Janice Cruz
Jerry Holman
Joe Reese
Roger Rucker
John Schrage
William Schuss
Billy Steelman
Christopher Talazac
Paul Wood

Jensen Hughes, Inc

Alan Harris

Sargent & Lundy

Pareez Golub

Westinghouse Electric Company, LLC

Amanda Charleroy
Kim Jones
Warren Odess-Gillett

EXCEL Services

Jim Andersen
Charles DeDeaux

Public

None