

February 07, 2001

MEMORANDUM TO: Stuart A. Richards, Director
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

FROM: Jack Cushing, Project Manager, Section 2 */RA/*
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF MEETING HELD ON JANUARY 9, 2001, WITH
WESTINGHOUSE TO DISCUSS BOILING WATER REACTOR (BWR)
FUEL PERFORMANCE AND BWR CONTROL ROD DESIGN (TAC NO.
MB0889)

On January 9, 2001, the staff held a public meeting with Westinghouse, portions of which were proprietary and therefore closed to the public, at the Nuclear Regulatory Commission (NRC) headquarters in Rockville, Maryland. The purpose of this meeting was to discuss Westinghouse's BWR control rod design and BWR fuel performance. Attachment 1 lists meeting participants. The non-proprietary version of the slides presented during the meeting are available under ADAMS accession number ML0101000438.

Bjorn Rebensdorff and Richard Matheny of Westinghouse presented the slides and discussed the design and evolution, operating experience, and development of the Westinghouse BWR control rod.

The control rod has had the same basic design since 1970. The changes that have been made are in the blade material and the use of boron carbide pins instead of boron carbide powder. The control rods are compatible with all BWR fuel and are currently used in GE BWR-3 through -6 designs.

The staff was then updated on the BWR control rod cracking that occurred in Japan in 1997 and at Hope Creek in 1998. The Hope Creek control rod developed a blister on the most exposed portion of the rod. Locally at the blister the blade thickness was 16 millimeters. The susceptible control rods at Hope Creek were inspected and all cracked blades were replaced. Westinghouse has developed guidelines on when to inspect the control rods based on radiation exposure.

Westinghouse then discussed the development of their new control rod design CR-99. The CR-99 is made of type 316L stainless steel and contains boron carbide pins. Westinghouse briefed the staff on their CR-99 lead rod program. Westinghouse plans to install lead rods at Oskarshamn 3 (Sweden), Olkiluoto1/2 (Finland) and Gundremmingen (Germany).

Westinghouse provided a brief update on their BWR fuel. The discussion included their current BWR fuel contracts, the fuel reliability and performance programs. Westinghouse stated that there have been no failures related to manufacturing defects or primary hydriding in their BWR

fuel. Westinghouse has delivered over 9,000 SVEA 10X10 fuel assemblies with lead assemblies reaching a burnup of 55 MWd/KgU.

Project No. 692

Attachment: Attendance List

cc w/att: See next page

fuel. Westinghouse has delivered over 9,000 SVEA 10X10 fuel assemblies with lead assemblies reaching a burnup of 55 MWd/KgU.

Project No. 692

Attachment: Attendance List

cc w/att: See next page

DISTRIBUTION:

PUBLIC

PDIV-2 Reading

JZwolinski/SBlack (RidsNrrDlpm)

SRichards (RidsNrrDlpmLpdiv)

SDembek

JCushing (RidsNrrPMJCushing)

EPeyton (RidsNrrLAEPeyton)

RidsOgcMailCenter

RidsAcrcAcnwMailCenter

MChatterton

EKendrick

SWu

Accession No. ML010380050

Package: ML010380046

Meeting Notice:
ML010050027

OFFICE	PDIV-2/PM	PDIV-2/LA	PDIV-2/SC
NAME	JCushing:am	EPeyton	SDembek
DATE	2/6/01	2/6/01	2/7/01

OFFICIAL RECORD COPY

cc:

Mr. Charles B. Brinkman, Manager
Washington Operations
Westinghouse Electric Company
CE Nuclear Power, LLC
12300 Twinbrook Parkway, Suite 330
Rockville, MD 20852

Mr. Virgil Paggen
CE Nuclear Power LLC
M. S. 9383-1922
2000 Day Hill Road
Windsor, CT 06095-1922

Mr. Philip W. Richardson, Manager
Windsor Nuclear Licensing
Westinghouse Electric Company
CE Nuclear Power, LLC
P.O. Box 500
2000 Day Hill Road
Windsor, CT 06095-0500

LIST OF ATTENDEES
MEETING WITH WESTINGHOUSE
JANUARY 9, 2001

WESTINGHOUSE

Andrew Cook
Bjorn Rebensdorff
Derek Ebeling-Koning
Richard Matheny
Virgil Paggen

McGRAW-HILL

Jenny Weil

NRC

Jack Cushing
Shih-Liang Wu
Edward Kendrick
Muffet Chatterton