



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

December 30, 1992

Docket Nos. 50-259, 50-260
and 50-296

LICENSEE: Tennessee Valley Authority

FACILITY: Browns Ferry Nuclear Plant, Units 1, 2, and 3

SUBJECT: SUMMARY OF THE DECEMBER 16, 1992 MEETING REGARDING DESIGN AND
OPERATION OF THE BROWNS FERRY HARDENED WETWELL VENT

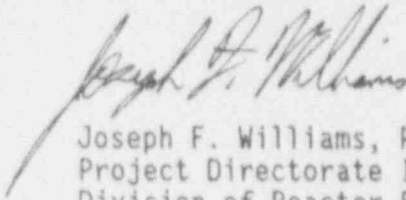
On December 16, 1992, representatives of the Tennessee Valley Authority (TVA) and the NRC staff met in Rockville, Maryland, to discuss the design and operation of the Browns Ferry Nuclear Plant (BFN) hardened wetwell vent. Meeting attendees are listed in Enclosure 1. Handouts distributed by TVA are provided in Enclosure 2.

This meeting was held to follow up on a finding from a team inspection conducted at BFN which examined engineering design change packages. This finding noted that the hardened wetwell vent design included three drain valves which required local manual action when the vent is operated. The inspection team was concerned these local actions may be prevented by high radiation fields in the event of core damage, and, therefore, plant operators would be unable to perform actions called for in the Browns Ferry emergency operating procedures.

TVA provided an outline of the vent design and plant layout. TVA plans to install the BFN Unit 2 vent during the refueling outage scheduled to begin on January 29, 1993. The BFN Units 1 and 3 vents will be installed prior to the restart of each reactor. TVA stated that the Browns Ferry vent is designed in accordance with the BWR Owners Group guidelines approved by the NRC. The team inspection findings are consistent with this statement.

In response to the concern raised by the team inspection, TVA stated that they will install float valves on two of the three drain lines. These float valves will operate passively, eliminating the need for local operator action on these lines. The third drain valve is located within the plant stack. TVA is evaluating whether or not this valve can be opened during an accident and left

open without increasing ground-level radiation source terms and associated doses beyond regulatory limits for design basis events. If this valve can be left open, the team's concern regarding local operator action will be resolved. TVA will inform the staff of the results of its evaluation.



Joseph F. Williams, Project Manager
Project Directorate II-4
Division of Reactor Projects - I/II

Enclosures:

1. List of Attendees
2. TVA Handouts

cc w/enclosures:
See next page

Browns Ferry Nuclear Plant

CC:

Mr. John B. Waters, Chairman
Tennessee Valley Authority
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Mr. J. R. Bynum, Vice President
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3B Lookout Place
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Browns Ferry Nuclear Plant
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P.O. Box 2000
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Mr. O. J. Zeringue, Vice President
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Dr. Mark O. Medford, Vice President
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3B Lookout Place
1101 Market Street
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ATTENDEES
DECEMBER 16, 1992 TVA/NRC MEETING
BROWNS FERRY HARDENED WETWELL VENT DESIGN AND OPERATION

<u>NAME</u>	<u>ORGANIZATION</u>
Joe Williams	NRR/DRPE/PD II-4
Joe McCarthy	TVA Recovery Mechanical/Nuclear Engineering Manager
Greg Pierce	TVA Browns Ferry Licensing Manager
Ron Frahm	NRR/DSSA/PSAB
Lambros Lois	NRR/DSSA/SRXB
Jim Maddox	TVA Browns Ferry Engineering Manager
Max Herrell	TVA Browns Ferry Operations Manager
Fred Hebdon	NRR/Director, PD II-4
Jack Kudrick	NRR/DSSA/SCSB
Cheryl Beardslee	NRR/DRPE/PD II-4
Mohan Thadani	NRR/DRPE/PD II-4
Thierry Ross	NRR/DRPE/PD II-4
Matt Mueller	TVA Mechanical/Nuclear Engineering
Sam Malur	MRR/DRIL/RSIB

AGENDA
DECEMBER 16, 1992
BROWNS FERRY HARDENED WETWELL VENT

TOPIC	SPOKESMAN
BACKGROUND	G. D. PIERCE
VENT PATH	J. E. McCARTHY
DESIGN GUIDELINES / CRITERIA	J. E. McCARTHY
ISSUES	J. E. McCARTHY
CURRENT ACTIVITIES	J. E. McCARTHY
CONCLUSION	J. E. MADDOX

DECEMBER 16, 1992
BROWNS FERRY HARDENED WETWELL VENT

TOPIC	SPOKESMAN
BACKGROUND	G. D. PIERCE
<ul style="list-style-type: none">• GENERIC LETTER 89-16 ENCOURAGED UTILITIES TO VOLUNTARILY INSTALL A HARDENED VENT• TVA COMMITTED TO INSTALL THE HARDENED VENT ON UNIT 2 DURING THE FIRST REFUELING OUTAGE AFTER RESTART TO REDUCE RISK ASSOCIATED WITH THE LOSS OF DECAY HEAT REMOVAL SEQUENCE• TVA ALSO COMMITTED TO INSTALL THE HARDENED VENT BEFORE THE RESTART OF UNITS 1 AND 3• THE HARDENED VENT WILL BE MODELED IN THE BFN PRA IN THE NEXT UPDATE AFTER INSTALLATION COMPLETED	

DECEMBER 16, 1992
BROWNS FERRY HARDENED WETWELL VENT

TOPIC

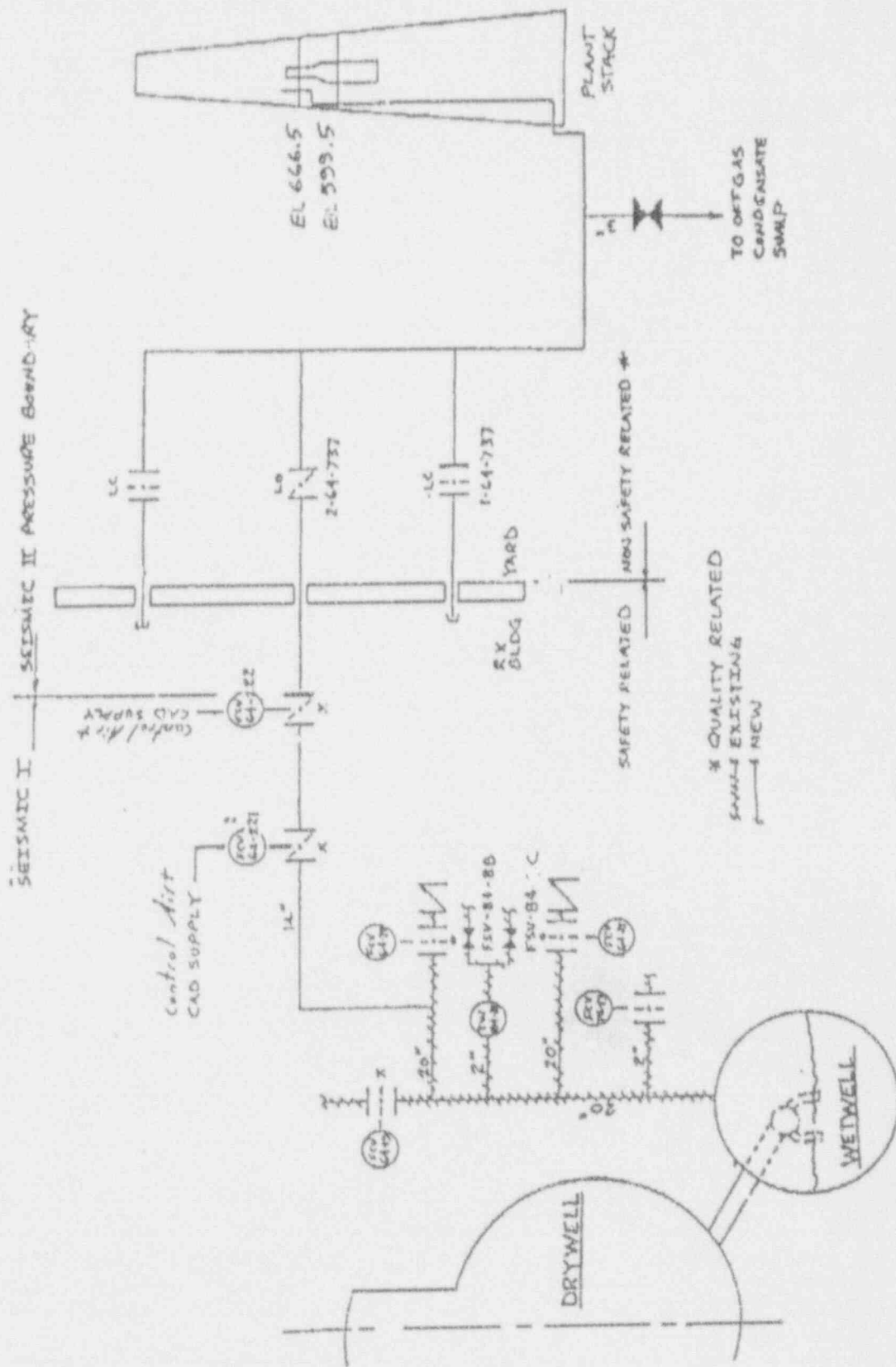
SPOKESMAN

VENT PATH

J. E. MCCARTHY

- PROPOSED VENT PATH SHOWN ON THE ATTACHED FIGURE
- PROVIDES A DIRECT VENT PATH FROM THE TORUS TO AN EXHAUST POINT INSIDE THE PLANT STACK (ELEVATED RELEASE)
- COMMON HEADER FOR UNITS 1, 2 AND 3
- SIZED FOR ONE UNIT VENTING AT A TIME

DECEMBER 16, 1992 BROWNS FERRY HARDENED WETWELL VENT



DECEMBER 16, 1992
BROWNS FERRY HARDENED WETWELL VENT

TOPIC

SPOKESMAN

DESIGN GUIDELINES / CRITERIA

J. E. MCCARTHY

TVA'S DESIGN MEETS THE BWROG GUIDELINES -

- DESIGNED TO REMOVE 1 PERCENT OF 105 PERCENT THERMAL POWER
- DESIGNED TO OPERATE UP TO A MAXIMUM TEMPERATURE OF 304°F AND 56 PSIG
- THE BFN HARDENED VENT VALVES ARE DC POWERED, PNEUMATICALLY OPERATED, AND ARE DESIGNED TO OPERATE DURING AN STATION BLACKOUT EVENT
- THE BFN HARDENED VENT IS AN ACTIVE SYSTEM; IT WILL NOT OPERATE PASSIVELY, WITHOUT OPERATOR ACTION
- INADVERTENT OPERATION OF THE BFN HARDENED VENT IS PREVENTED BY KEY LOCK SWITCHES IN THE CONTROL ROOM FOR THE ISOLATION VALVES

DECEMBER 16, 1992
BROWNS FERRY HARDENED WETWELL VENT

TOPIC	SPOKESMAN
DESIGN GUIDELINES / CRITERIA (CONTINUED)	J. E. MCCARTHY
<ul style="list-style-type: none">• BFN VENT IS CAPABLE OF WITHSTANDING EXPECTED CONDITIONS ASSOCIATED WITH THE "TW" SEQUENCE WITHOUT LOSS OF FUNCTIONAL CAPABILITY• BWROG AND TVA DID NOT ASSUME FAILED FUEL ASSOCIATED WITH THE "TW" SEQUENCE• USES EXISTING RADIATION MONITORING• NO IGNITION SOURCES IN THE PIPING	

DECEMBER 16, 1992
BROWNS FERRY HARDENED WETWELL VENT

	TOPIC	SPOKESMAN
ISSUES	<ul style="list-style-type: none">• CURRENT DESIGN REQUIRES MANUAL OPENING OF A DRAIN VALVE IN THE STACK PRIOR TO INITIATION OF VENTING• CURRENT DESIGN REQUIRES MANUAL CYCLING OF LOW POINT DRAIN VALVES PRIOR TO RE-USING THE VENT• EMERGENCY OPERATING INSTRUCTIONS ARE SYMPTOMATIC AND REQUIRE VENTING AT ELEVATED CONTAINMENT PRESSURES TO PRECLUDE CONTAINMENT FAILURE REGARDLESS OF RADIOLOGICAL CONDITIONS	J. E. MCCARTHY

DECEMBER 16, 1992
BROWNS FERRY HARDENED WETWELL VENT

TOPIC	SPOKESMAN
CURRENT ACTIVITIES	J. E. MCCARTHY
<ul style="list-style-type: none">• CALCULATIONS BEING PERFORMED TO DETERMINE IF STACK DRAIN VALVE CAN BE LEFT OPEN FOR DESIGN BASIS ACCIDENTS (GROUND LEVEL RELEASE)• STACK DRAIN VALVE ISSUE MUST BE RESOLVED CONCURRENT WITH NRC REVIEW OF CONTROL ROOM EMERGENCY VENTILATION SYSTEM'S CONFORMANCE TO GDC 19• LOW POINT DRAINS VALVES TO BE REPLACED WITH FLOAT VALVES TO PRECLUDE MANUAL OPERATOR ACTION	

DECEMBER 16, 1992
BROWNS FERRY HARDENED WETWELL VENT

TOPIC	SPOKESMAN
<p>CONCLUSION</p> <ul style="list-style-type: none">• BFN HARDENED VENT MEETS OR EXCEEDS THE BWROG DESIGN CRITERIA• BFN HAS BEEN PROACTIVE IN ADDRESSING NRC CONCERNS• BFN WILL FULFILL ITS VOLUNTARY COMMITMENT TO INSTALL THE HARDENED VENT DURING THE UNIT 2 CYCLE 6 OUTAGE	<p>J. E. MADDOX</p>