

APR 22 1982

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Encket Nos.: 50-508/509

MEMORANDUM FOR: F. J. Miraglia, Chief, Licensing Branch No. 3, DL
FROM: L. L. Wheeler, Project Manager, Licensing Branch No. 3, DL
SUBJECT: WNP 3 & 5 MEETING WITH NRC PROJECT MANAGER

DATE & TIME: Tuesday, May 11, 1982
9:00 a.m. - 11:00 a.m.

LOCATION: Room 130
Phillips Building
Bethesda, Md.

PURPOSE: General discussion of review process and preliminary identification of any possible unique features of the WNP 3 & 5 project.

AGENDA: WNP 3 & 5 participant presents an overview of the pending DL application. Any areas of interest that may warrant early attention due to unique features are identified and described.

PARTICIPANTS: NRC
L. Wheeler, et.al.

WNP 3 & 5
K. Cook

Louis L. Wheeler, Project Manager
Licensing Branch No. 3
Division of Licensing

cc. See next page.

NOTE: NRC meetings are open to interested members of the public to attend as observers. Members of the public who wish to attend this meeting must contact L. Wheeler (301/492-7792) or F. Miraglia (301/492-7243) no later than 3:45 pm, May 7, 1982.

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XA

PRICE	DL: LB#3	DL: LB#3				
NAMES	L. Wheeler:jb	F. J. Miraglia	XA Copy Has Been Sent to PDR			
DATE	4/24/82	4/27/82				

#6

APR 30 1982

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Docket No.: See Attached Listing
LS05-82-



Mr. Ken P. Baskin, Chairman
CE Owners Group
Southern California Edison Company
Post Office Box 800
2244 Walnut Grove Avenue
Rosemead, California 91770

50-255

Dear Mr. Baskin:

SUBJECT: CE REACTOR VESSEL LEVEL MEASUREMENT SYSTEM USING
HEATED JUNCTION THERMOCOUPLE

REFERENCE: TMI Item II.F.2

We have reviewed the CE reactor vessel level measurement system using heated junction thermocouples and found that additional information is required.

Accordingly, please respond to the enclosed request which has been previously discussed with you by May 15, 1982.

This request for information is within the purview of OMB Clearance Number 3150-0065.

Sincerely,

Original signed by

Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
Division of Licensing

Enclosure:
Request for Additional
Information

cc w/enclosure:
See below

OFFICE	DL: ORB#5/LA	DL: ORB#5/PM	DL: ORB#5				
NAME	HShen Lh-shah	JShen	DC Crutchfield				
DATE	4/24/82	4/27/82	4/27/82				

50-255-3166-5

Mr. Ken P. Baskin

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January 27, 1982

cc:

Palo Verde Nuclear Generating Station
Units 1, 2 & 3

STN 50-528/529/530
LPM: E. Licitra

Mr. E. E. Van Brunt, Jr.
Vice President - Nuclear Projects
Arizona Public Service Company
Post Office Box 21666
Phoenix, Arizona 85036

Arkansas Units 1 and 2

STN 50-313/368
LPM: B. Martin

Mr. William Cavanaugh, III
Senior Vice President, Energy
Supply Department
Arkansas Power & Light Company
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Calvert Cliffs Unit 1 and 2

STN 50-317/318
LPM: D. Jaffe

Mr. A. E. Lundvall, Jr.
Vice President - Supply
Baltimore Gas & Electric Company
Post Office Box 1475
Baltimore, Maryland 21203

Palisades Plant

STN 50-255
LPM: T. Wambach

Mr. David P. Hoffman
Nuclear Licensing Administrator
Consumers Power Company
1945 W. Parnall Road
Jackson, Michigan 49201

Perkins Units 1, 2 & 3 and
Cherokee 1, 2 & 3

STN 50-488/489/490
STN 50-491/492/493
LPM: E. Licitra

Mr. L. C. Dail, Vice President
Design Engineering
Duke Power Company
Post Office Box 33189
Charlotte, North Carolina 28242

REQUEST FOR ADDITIONAL INFORMATION ON
CE REACTOR VESSEL LEVEL MEASUREMENT SYSTEM
USING HEATED JUNCTION THERMOCOUPLES

1. Provide an analysis of the response (with the reactor coolant pumps running) of the heated junction thermocouple level measurement system (a) with the full length separator tube, and (b) with the split separator tube in the System 80 plants. Also discuss the instructions to the operator for interpretation of the indications.

2. Provide an analysis of the response of the heated junction thermocouple level measurement system with a break in the upper head (a) with the full length separator tube, and (b) with the split separator tube in the System 80 plants. Also discuss the instructions to the operator for interpretation of the indications.

3. Provide an analysis of the response of the heated junction thermocouple level measurement system after a large break LOCA. In particular how will the level inside that separator tube compare with the level outside, taking into account the drain rate of the separator tube. What instructions will be provided the operator for interpretation of the indicators?

4. Describe the effects of failure of the following components of the heated junction thermocouple level measurement system with respect to measurement system response, information presented to the operator, and effects on recovery from an abnormal transient.

A. Sensor

1) Single thermocouple failure in a single sensor. The thermocouple is assumed to fail by a break in at least one thermoelement that would result in an open circuit.

a. Would the automatic checking procedure detect the fault before the QSPDS continued to record data?

b. What would happen to the differential output?

2) Heater failure in a single sensor. The heater is assumed to fail by a break in the heater element that would result in an open circuit.

a. Would the automatic checking procedure detect the fault before the QSPDS continued to record data?

b. What would be the effect on the other heaters in the same string?

3) Assume a rupture in the sensor sheath so that coolant is admitted into the sensor.

a. Would the automatic checking procedure detect the fault before the QSPDS continued to record data?

b. What would be the effect on the heater in the affected area, and other heaters in the same string?

B. Probe

- 1) Reactor vessel seal failure.

C. Cables

- 1) Assume failure of connector.
 - a. Complete failure of connector.
 - b. Partial failure (only some of the connections fail).
- 2) Severed cable.
- 3) Wet connector.
- 4) Incorrect wiring at connectors (or any other location inside containment).

A common error in large installations is the incorrect wiring of the thermocouple extension cables by connection of the Alumel extension lead to the Chromel thermoelement et cetera. Under stable containment conditions this could produce an offset. If the temperature of the containment were to rise, much larger temperature errors could result. This situation should be analyzed for the effect on both the thermocouple signals from the individual thermocouples and the differential signals.

D. Control Circuit

- 1) If the heater supply is designed for fast response, rapid fluctuations in the control signal can induce oscillations in the heater supply output. This in turn could cause heater failure by overheating or fatigue.

Mr. Ken P. Baskin

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January 27, 1982

CC:

St. Lucie Units 1 and 2

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Vice President
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Waterford Steam Electric Station,
Unit 3

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LPM: S. Black

Mr. L. V. Maurin
Assistant Vice President -
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Maine Yankee

STN 50-309

LPM: B. Requa

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Millstone Unit 2

STN 50-336

LPM: M. Conner

Mr. W. G. Council
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Ft. Calhoun

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Mr. W. C. Jones
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Mr. Ken P. Baskin

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January 27, 1982

cc:

San Onofre 2 and 3

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LPM: H. Rood

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Yellow Creek Nuclear Plant
Units 1 and 2

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LPM: L. Wheeler

Mr. H. E. Farris
Manager of Power
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Washington Public Power Supply System,
Units 3 & 5

STN 50-508/509
LPM: L. Wheeler

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