DISTRIBUTION
Docket file
NRC PDR
L PDR
ORB#2 reading
DEisenhut
OELD
EJordan
RHermann
SNorris
NSIC
JTaylor
ACRS, 10
Gray

Docket No. 50-220

JUL 18 1983

Mr. G. K. Rhode
Senior Vice President
Niagara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, New York 13202

Dear Mr. Rhode:

SUBJECT: NUREG-0737 Item II.F.1.4 Containment Pressure Monitor
II.F.1.5 Containment Water Level Monitor
II.F.1.6 Containment Hydrogen Monitor

RE: NINE MILE POINT NUCLEAR STATION, UNIT NO. 1

We have reviewed your submittals dated December 31, 1980, March 31, 1981 and June 24, 1982, on TMI Action Plan Items II.F.1.4, Containment Pressure Monitor, II.F.1.5, Containment Water Level Monitor, and II.F.1.6, Containment Hydrogen Monitor. The scope of our review included all requirements except for the criteria requiring that the equipment be environmentally qualified (Appendix B of NUREG-0737). This latter issue will be reviewed separately under the scope of the Commission's environmental qualification program.

As discussed in the enclosed Safety Evaluation, we have concluded that the requirements of NUREG-0737, Items II.F.1.4, II.F.1.5 and II.F.1.6 for the Nine Mile Point Nuclear Station, Unit No. 1 have been met and thus, are considered resolved.

Sincerely,

Original signed by
D. B. Vassallo

Domenic B. Vassallo, Chief
Operating Reactors Branbh #2
Division of Licensing

Enclosure:
Safety Evaluation

cc w/enclosure:
See next page

8307290204 830718
PDR ADOCK 05000220
P PDR

Add H. Nicolaras

OFFICE	LA-ORB#2:DL	ORB#2:DL	C-ORB#2:DL	DL:ORB#2			
SURNAME	SNorris/dn	RHermann	DVassallo	HNicolaras			
DATE	7/15/83	7/16/83	7/18/83	7/18/83			

NRC FORM 318 (10-80) NRCM 0240 OFFICIAL RECORD COPY USGPO: 1981—335-960

Mr. G. K. Rhode
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station, Unit No. 1

cc:

Troy B. Conner, Jr. Esq.
Conner & Wetterhahn
Suite 1050
1747 Pennsylvania Ave., NW
Washington, D.C. 20006

Director,
Technological Development Programs
State of New York
Energy Office
Swan Street Building
CORE 1 - Second Floor
Empire State Plaza
Albany, New York 12223

Mr. Robert P. Jones, Supervisor
Town of Scriba
R. D. #4
Oswego, New York 13126

Niagara Mohawk Power Corporation
ATTN: Mr. Thomas Perkins
Plant Superintendent
Nine Mile Point Nuclear Station
P.O. Box 32
Lycoming, New York 13093

U.S. Environmental Protection Agency
Region II Office
Regional Radiation Representative
26 Federal Plaza
New York, New York 10007

Resident Inspector
c/o U.S. NRC
P. O. Box 126
Lycoming, New York 13093

John W. Keib, Esquire
Niagara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, New York 13202

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Mr. Jay Dunkleberger
Division of Policy Analysis and Planning
New York State Energy Office
Agency Building 2, Empire State Plaza
Albany, New York 12223

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO TMI ACTION PLAN ITEMS (NUREG-0737)

II.F.1.4 CONTAINMENT PRESSURE MONITOR

II.F.1.5 CONTAINMENT WATER LEVEL MONITOR

II.F.1.6 CONTAINMENT HYDROGEN MONITOR

TO FACILITY OPERATING LICENSE NO. DPR-63

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION, UNIT NO. 1

DOCKET NO. 50-220

1.0 Background

By our letter of September 5, 1980 (Reference 1) to: (1) licensees of operating plants; (2) applicants for operating licenses; and (3) holders of construction permits; we issued a summary listing of all the approved TMI Action Plan Requirements. In November of 1980 we issued NUREG-0737, Clarification of TMI Action Plan Requirements (Reference 2), which specifies TMI Action Plan Items approved by the Commission for implementation. This Safety Evaluation (SE) addresses three of the TMI Action Plan Items II.F.1.4, 5, and 6.

2.0 II.F.1.4: Containment

2.1 NUREG-0737 CPMS Position

A continuous indication of containment pressure shall be provided in the control room of each operating reactor. Measurement and indication capability shall include three times the design pressure of the containment for concrete, four times the design pressure for steel, and -5 psig for all containments.

2.2 NUREG-0737 CPMS Clarification

(1) Measurement and indication capability shall extend to 5 psia (-10 psig) for subatmospheric containments.

(2) Two or more instruments may be used to meet the range requirements. However, instruments that need to be switched from one scale to another scale to meet the range requirements are not acceptable.

(3) Continuous display and recor
over the specified range in

(4) The accuracy and response ti
monitor shall be provided an
their intended function.

2.3 Scope of CPMS Evaluation

The licensee has described his des
3 and 4. Our review of the licens
following: (1) checking for deviat
stated in Sections 2.1 and 2.2 abo
accuracy specifications of the CPM
the response time specifications o
for system accuracy are the root-s
by the licensee. The accuracy fig
full scale. The figures quoted fo
values. For linear transfer funct
the time for 100% response is four

2.4 Licensee Compliance with NUREG-073

After reviewing the licensee's subn
meets all the requirements of Secti

2.5 Evaluation of CPMS Accuracy and Time

The CPMS indicator and recorder are
the control room. The CPMS indicato
of full scale and a response time of
has a system accuracy of 0.6% of ful
which varies between 0.8 and 1.0 sec
of the pressure transient. These va
present state of the art, will provi
of the CPMS that is sufficiently acc
operator to adequately assess pressu

3.0 II.F.1.5: Containment Water Level M

3.1 NUREG-0737 CWLMS Position

A continuous indication of containmer
the control room for all plants. A r
provided for PWRs and cover the range
containment sump. A wide-range instr
PWRs and shall cover the range from t
the elevation equivalent to 600,000 g
range instrument shall be provided an
to five feet above the normal water l

3.2 NUREG-0737 CWLMS Clarification

(1) The measurement capability of 600,000 gallons is based on recent plant designs. For older plants with smaller water capacities, licensees may propose deviations from this requirement based on the available water supply capability at their plant.

(2) Narrow-range water level monitors are required for all sizes of sumps inside the containment.

(3) For BWR pressure-suppression containments, the Emergency Core Cooling System (ECCS) suction line inlets may be used as a starting reference point for the wide-range water level monitors, instead of the bottom of the suppression pool.

(4) The accuracy requirements of the water level monitors shall be provided and justified to be adequate for their intended function.

3.3 Scope of CWLMS Evaluation

The licensee has described his design for the CWLMS in references from 3 and 4. Our review of the licensee's submittals consists of the following: (1) checking for deviations from our requirements which are stated in Sections 3.1 and 3.2 above, and (2) reviewing the adequacy of the accuracy specifications for the CWLMS. The figures quoted herein for system accuracy are the root-sum-square of the module accuracies quoted by the licensee. The accuracy figures are expressed as a percentage of full scale.

3.4 Licensee Compliance with NUREG-0737 CWLMS Requirements

After reviewing the licensee's submittals, we find that the CWLMS meets all the requirements of Sections 3.1 and 3.2 above, and in addition has the following feature: The CWLMS, for which Section 3.1 requires only an indicator readout, has both indicator and recorder readouts.

3.5 Evaluation of CWLMS Accuracy

The licensee has installed the CWLMS in the torus only, which fulfills the requirements of Sections 3.1 and 3.2 above. As noted previously, the CWLMS readout is on both an indicator and a recorder in the control room. The indicator loop has a system accuracy of 2.0% of full scale and the recorder loop has an accuracy of 0.6% of full scale. These values, which are consistent with the present state of the art, will provide information over the intended range of the CWLMS that is sufficiently accurate and useful to allow the plant operator to adequately assess water level conditions.

4.0 II.F.1.6: Containment Hydrogen Monitor System (CHMS)

4.1 NUREG-0737 CHMS Position

A continuous indication of hydrogen concentration in the containment atmosphere shall be provided in the control room. Measurement capability shall be provided over the range of 5% to 10% hydrogen concentration under both positive and negative ambient pressures.

4.2 NUREG-0737 CHMS Clarification

(1) The continuous indication of hydrogen concentration is not required during normal operation. If an indication is not available at all times, continuous indication and recording shall be functioning within 30 minutes of the initiation of safety injection.

4.3 Scope of CHMS Evaluation

The licensee has described his design for the CHMS in references from 3 and 4. Our review of the licensee's submittals consists of the following: (1) checking for deviations from our requirements which are stated in Sections 4.1 and 4.2 above, (2) reviewing the adequacy of the accuracy specifications for the CHMS, and (3) reviewing the adequacy of the hydrogen sample port placement for the CHMS. The figures quoted herein for system accuracy are the root-sum-square of the module accuracies quoted by the licensee. The accuracy figures are expressed as a percentage of full scale.

4.4 Licensee Compliance with NUREG-0737 CHMS Requirements

After reviewing the licensee's submittals, we find that the CHMS design meets all the requirements of Sections 4.1 and 4.2 above.

4.5 Evaluation of CHMS Accuracy and Sample Port Placement

The CHMS recorder-indicator is located in the control room. The CHMS recorder-indicator loop has a system accuracy of 2.1% of full scale. This value, which is consistent with the present state of the art, will provide information over the intended range of the CHMS that is sufficiently accurate and useful to allow the plant operator to adequately assess the hydrogen concentration within the torus and drywell. The licensee has installed 2 hydrogen sample ports within the torus and 5 ports within the drywell which permits rapid detection of hydrogen escaping from the reactor.

5.0 Conclusion

From the results of our evaluation we find the licensee has met all the requirements of NUREG-0737 for items II.F.1.4, 5 and 6; we therefore conclude his design for these three items acceptable.

Principal Contributor: P. Kapo

Dated: July 18, 1983

6.0 References

(1) Letter from D. G. Eisenhut (NRC) to All Licensees of Operating Plants and Applicants for Operating Licenses and Holders of Construction Permits, 5 Sep 80. Subject: Preliminary Clarification of TMI Action Plan Requirements.

(2) NUREG-0737, "Clarification of TMI Action Plan Requirements," U. S. Nuclear Regulatory Commission, Nov 1980.

(3) Letter from Donald P. Dise (NM) to Darrell G. Eisenhut (NRC), 31 Dec 80. Subject: System descriptions of the CPMS and CWLMS.

(4) Letter from Donald P. Dise (NM) to Darrell G. Eisenhut (NRC), 31 Mar 81. Subject: System description of the CHMS.

(5) Letter from Domenic B. Vassallo (NRC) to G. K. Rhode (NM), 14 May 82. Subject: Transcript of phone conversations to gather information about the CPMS, CWLMS and CHMS.

(6) Letter from Thomas E. Lempges (NM) to Domenic B., Vassallo (NRC), 24 Jun 82. Subject: MN's response to Reference 5.