

FROM: <b>Metropolitan Edison Co. Reading, Penn. R.E. Naidig</b>		DATE OF DOCUMENT: <b>5-9-69</b>	DATE RECEIVED <b>5-27-69</b>	NO.: <b>1732</b>
TO: <b>Morris</b>		LTR. <b>X</b>	MEMO:	REPORT:
CLASSIF.: <b>U</b>		ORIG.:	CC:	OTHER:
POST OFFICE REG. NO:		<b>3 signed &amp; notarized 5-20-69 &amp; 40 conf'd cys</b>		
ACTION NECESSARY <input type="checkbox"/>		CONCURRENCE <input type="checkbox"/>		DATE ANSWERED:
NO ACTION NECESSARY <input type="checkbox"/>		COMMENT <input type="checkbox"/>		BY:
FILE CODE:		<b>50-289</b>		
DESCRIPTION: (Must Be Unclassified) <b>Ltr notarized 5-20-69 re: our ltr 1-7-69 use of roller-rat control rod drives.... &amp; re: out ltr 2-5-69 &amp; meeting 12-19-69 discussing issues not resolved in const review....</b>		REFERRED TO	DATE	RECEIVED BY
ENCLOSURES: <b>40 cys</b>		<b>Long</b>	<b>5-27-69</b>	
PREL. REPORT...Summary of Factory Test Reactor bldg Fan Assemblies, dtd 5-9-69		<b>W/8 cys for action</b>		
REMARKS:		DISTRIBUTION:		
<b>(3) cys holding for ACRS</b>		<del>Reg file cy</del>		
		AEC PDR		
		Compliance (2)		
		Morris/Schroeder, Joyd		
		H. L. Price & Staff		
		D. Thompson		
		Dube/Lavine		
		Rosen		
		Neuve		
		Howe		
		Brennerich (2)		
		OGC		

U.S. ATOMIC ENERGY COMMISSION

MAIL CONTROL FORM FORM AEC-3265 (8-60)

☆ U. S. GOVERNMENT PRINTING OFFICE: 1968-296-615

POOR ORIGINAL

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METROPOLITAN EDISON COMPANY SUBSIDIARY OF GENERAL PUBLIC UTILITIES CORPORATION

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TELEPHONE 215 - 929-3601

May 9, 1969

United States Atomic Energy Commission  
Washington, D.C. 20545

Attention: Mr. Peter A. Morris, Director  
Division of Reactor Licensing

Subject: Three Mile Island Nuclear Station  
Unit 1, Docket 50-289

Reference: (a) U.S.A.E.C. Letter to Met-Ed dated January 7, 1969  
(b) U.S.A.E.C. Letter to Met-Ed dated February 5, 1969

Gentlemen:

Regulatory

File Cy.

Reference (a) replied to the Met-Ed letter of December 10, 1968 which discussed the use of roller-nut control rod drives instead of the rack and pinion drives described in the Preliminary Safety Analysis Report. Reference (a) noted that certain points of difference appeared to exist between the two rod drive systems and requested further information with respect to:

- (1) The capability to drive in a "stuck rod" equivalent to a 400 lb. weight. This capability is discussed in Three Mile Island Unit 2 P.S.A.R., Docket 50-320, Volume 2, Page 3-94, Section 3.2.4.3.1.1.h.
- (2) The run speed of 30 inches/minute. This is discussed in T.M.I. 2 P.S.A.R., Docket 50-320, Volume 4, Supplement 5, Page S5-1, Subject 1.0.
- (3) The lack of a seal water injection. The roller nut rod drive design has no seals nor need for a seal water injection.
- (4) A more indirect means of inferring rod position. This is discussed in T.M.I. Unit 2 P.S.A.R., Docket 50-320, Volume 4, Supplement 5, Pages S5-3 through S5-6, Subjects 4.0 and 5.0; and in Volume 2, Page 3-99, Section 3.2.4.3.2.m.

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- (5) The unidirectional clutch in the rack and pinion system denying upward motion with a rod withdrawal signal. The following information will be included in the Three Mile Island Unit 1 F.S.A.R.:

A system for inhibiting rod withdrawal in the event of a rupture in the system such as a unidirectional clutch or rod ejection latch has not been incorporated into the design. The analysis has proceeded to the point where it is not considered that such a device should be required. Two years ago when the rack and pinion drive was being discussed sufficient calculations had not been made to determine whether a rod ejection inhibit device was required; accordingly, it was included in the rack and pinion mechanism. Upward motion of the roller nut drive due to a rupture in the pressure housing is inhibited by engagement of the roller nut and the lead screw while power is on the unit. When power is off the unit due to a low pressure scram following a major system break, analysis indicates that either a rupture in the housing or a loss of coolant accident will not result in a positive reactivity addition to the core.

- (6) Reanalysis of the startup accident, as a result of faster nominal drive speed. This is discussed in T.M.I. Unit 2 P.S.A.R., Docket 50-320, Volume 4, Supplement 5, Page S5-1, Subject 1.0.
- (7) Reevaluation of the rod ejection accident. This is discussed in T.M.I. Unit 2 P.S.A.R., Docket 50-320, Volume 4, Supplement 5, Page S5-1, Subject 2.0.
- (8) The quality assurance programs associated with the rod drives. This is discussed in T.M.I. Unit 2 P.S.A.R., Docket 50-320, Volume 4, Supplement 5, Page S5-2, Subject 3.0.
- (9) Relationship of the control rod drive power system and position indication system as related to the control and protection system. This is discussed in T.M.I. Unit 2 P.S.A.R., Docket 50-320, Volume 4, Supplement 5, Pages S5-3 and S5-4, Subject 4.0.

Reference (b) reviewed a meeting between Met-Ed and the A.E.C. Division of Reactor Licensing on December 19, 1968 which was held to discuss issues not fully resolved during the construction permit review. Reference (b) further noted that certain design information should be made available to D.R.L. for review prior to filing the Final Safety Analysis Report in order to avoid potential delays in the operating license review.

Response to the availability of design information for review for the items listed in reference (b) is as follows:

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(1) Combined Seismic and Loss of Coolant Accident Loads

Topical reports on the resultant stresses and deformation in the core and internals are in preparation. The report on the internals will be available in the second quarter of 1969, and the report on the core will be available in the third quarter of 1969. Both will be filed with the A.E.C. as B&W Topical Reports.

(2) Dilution System Controls

The design of the dilution system controls will be available to Met-Ed in the second quarter of 1969 as noted at the December D.R.L. Meeting. Met-Ed will forward by letter to the A.E.C. the TMI Unit 1 design upon receipt from B&W.

(3) Failed Fuel Element Detector

A report on the scoping study is in preparation. This information will be made available to Met-Ed in the second quarter of 1969. Met-Ed will then forward the report by letter to the A.E.C.

(4) Pressure Vessel Thermal Shock

B&W is planning to file a topical report on this subject with the A.E.C. by the end of May 1969.

(5) R & D Items

Updated information on the status and schedule for completion of these items is discussed in TMI Unit 2 P.S.A.R., Docket 50-320, Volume 4, Supplement 3 as follows:

(a) Xeron Oscillations

Refer to Page 11.0 - Aa-1 through Page 11.0 - Aa - 3. A B&W Topical Report will be issued in early 1970.

(b) Iodine Removal Spray

Page 11.0 - Aj-1 refers to the TMI Unit 1 P.S.A.R., Docket 50-289, Supplement 3, Answer to Question 17.4. A B&W Topical Report will be issued in the second quarter of 1969.

(c) Thermal Hydraulics

Refer to Page 11.0 - Ab-1 through 11.0 - Ab-2. A B&W Topical Report will be issued in the second quarter of 1969.

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(d) Internal Vent Valves

Refer to Page 11.0 - Ae-1 through 11.0 - Ae-3. A B&W Topical Report will be issued in the second quarter of 1969.

(e) Fuel Rod Clad Failure

Refer to Page 11.0 - Ac-1 through 11.0 - Ac-3. A B&W Topical Report will be issued in early 1970.

(f) Self-Powered In-Core Detectors

Refer to Page 11.0 - Ah-1 through 11.0 - Ah-2. A B&W Topical Report will be issued in the second quarter of 1969.

(g) High Burnup Fuel Tests

Refer to Page 11.0 - Ad-1 through 11.0 - Ad-2. A B&W Topical Report will not be filed since the tests are not needed to complete the safety evaluation of TMI Unit 1.

(6) Airplane Hardening of Critical Structures

Information relative to the design of airplane hardened structures will be available and forwarded by letter to the A.E.C. for review during July 1969.

(7) Reactor Building Fan Cooler Tests

A preliminary report covering tests which have been or will be accomplished on the fan coolers is enclosed. The report covers the following tests:

- (a) Emergency Coil Test - A final report on the test will be issued on or about July 1, 1969.
- (b) Relief Valve Test - A final report on the test will be issued on or about July 1, 1969.
- (c) Motor-Seal-Winding Tests - completed.
- (d) Fan and Motor Tests - A final report will be issued by January 2, 1970.

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Further reporting of the test results will be forwarded to the A.E.C.  
by letter upon completion in accordance with the above schedule.

Very truly yours,

*R. E. Heidig*  
R. E. HEIDIG  
Vice President

REN:D  
Enclosure

Sworn to and subscribed before me this 20th day of May, 1969.

*Charles J. Conrad*  
\_\_\_\_\_  
Notary Public  
Muhlenberg Township, Berks Co.  
NOTARY PUBLIC  
MUHLENBERG TOWNSHIP, BERKS COUNTY  
My Commission Expires October 14, 1972

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