

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION
Harold R. Denton, Director

In the Matter of)	
COMMONWEALTH EDISON COMPANY)	Docket Nos. 50-237, 50-249,
(Dresden Station Units 2 and 3))	50-254, 50-265
(Quad Cities Station Units 1 and 2))	(10 CFR 2.206)

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated October 24, 1980, Ms. Catherine Quigg, on behalf of Pollution and Environmental Problems, Inc. requested, pursuant to 10 CFR Section 2.206 of the Commission's regulations, that the Commission immediately shut down the Dresden Station Units 2 and 3 and Quad Cities Station Units 1 and 2 until "essential scram discharge volume monitoring equipment" is installed (Petition, p.1). This equipment was the subject of an October 2, 1980 "Confirmatory Order" sent to Commonwealth Edison Company (licensee) which required that the equipment be in place by December 1, 1980; in the interim period between October 2 and December 1, the licensee was ordered to increase surveillance of the scram discharge volume (SDV) water level to at least once per shift.

I.

Ms. Quigg's petition contends that the health and safety of the citizens of Illinois and neighboring states are endangered as long as the Dresden and Quad Cities reactors are permitted to operate without the required scram discharge volume monitoring equipment. Her concern stems from an event at the Browns Ferry Nuclear Station on June 28, 1980 involving the accumulation of water in the SDV and action taken by the NRC subsequent to that event.

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Her argument is that the interim monitoring program, referred to above, which has been implemented at the Dresden and Quad Cities Units as a result of the October 2 "Confirmatory Order" is not sufficient to prevent an occurrence similar to the Browns Ferry event. That argument is based upon concerns expressed in a memorandum dated August 18, 1980 from Carlyle Michelson, Director of the NRC Office of Analysis and Evaluation of Operational Data, to me as Director of the NRC Office of Nuclear Reactor Regulation. (Petition, pp. 1-2) In light of the Michelson memorandum, and since the Dresden and Quad Cities reactors are subject to the same type of event as occurred at Browns Ferry, Ms. Quigg requests that they be shut down immediately until continuous monitoring of their SDV is implemented on December 1.

The Staff has evaluated Ms. Quigg's concern that the SDV cannot be properly monitored prior to installation of continuous monitoring equipment on December 1, 1980. For the reasons set forth below, I find that the interim procedures specified in the October 2, 1980 Confirmatory Order are sufficient to insure that continued operation of the Dresden and Quad Cities units until December 1, 1980 will not jeopardize the public health and safety.

II.

As Ms. Quigg's petition correctly indicates, the cause of failure to automatically scram at Browns Ferry was the presence of residual water in the SDV which reduced available free volume for the scram discharge water and inhibited control rod insertion. As a result of that event, the NRC

issued Inspection and Enforcement Bulletin 80-17 (IEB 80-17) on July 3, 1980. That bulletin described actions to be taken by all licensees of operating General Electric designed BWR reactors, including the Dresden and Quad Cities units. Among the actions described in the bulletin were (1) performance of surveillance tests to verify the absence of residual water in the SDV and associated piping, and to verify that the SDV vent valves are operable and the vent system free of obstruction (2) verification at the conclusion of the tests, and after all scrams, that all vent lines in the SDV are functional and the SDV is free of residual water, and (3) implementation of surveillance procedures such that the SDV is monitored daily for residual water. In addition to imposition of bulletin requirements, procedures in the event of scram failure were reviewed to assure that adequate measures to safely shut down are available.

Additional actions were requested in supplements 1, 2 and 3 to IEB 80-17, dated July 18, July 22 and August 22, 1980, respectively. In particular, item B.1 of supplement 1 requested that licensees install a system to continuously monitor water levels in all SDV's, providing continuous recording alarm functions in the design. In addition, supplement 1 requested a firm commitment for an installation date, and a commitment to provide equipment changes and/or surveillance requirements in addition to those now in effect that will provide adequate assurance of SDV operability in the interim until installation is complete. Supplement 2 required modifications to the vent system to assure continuous system venting.

Commonwealth Edison Company's response to Supplements 1 and 2, dated August 15, 1980, was unacceptable in that it did not provide an acceptable date for installation for the continuous monitoring system. In view of the fact that IEB 80-17 and its supplements were issued to elicit from licensees measures which would provide assurance of continued safe operation during the interim period until an ultimate resolution could be achieved by changes in system design and operating procedures, and in view of the Commonwealth Edison Company's unacceptable response to that bulletin, the NRC issued the above-mentioned October 2, 1980 "Confirmatory Order." In that Order, the NRC staff concluded that particular criteria must be satisfied in order to provide adequate justification for continued operation. These criteria (1) reflect the NRC judgment that continuous monitoring of the SDV, with appropriate indication and alarm in the control room, should be completed by December 1, 1980, and (2) require that until installation is completed and the equipment is operable, surveillance checks of the SDV should be made at least once per shift whenever the reactor is critical.

Petitioner apparently does not realize that the concern she has expressed in her petition regarding the propriety of the interim measures required by the October 2 Order was taken into consideration prior to the issuance of that Order. As her petition correctly states, the Michelson memorandum dated August 18, 1980 raised a question regarding the potential for unacceptable interaction between the control rod drive system and the non-essential control air system at the Browns Ferry Station. In this postulated event, a slow loss of control air pressure to the scram discharge valve

actuators could allow the valves to drift open as air pressure decreased. Possible in-leakage might partially fill the SDV in a matter of minutes without any indication of SDV header fill. Since the SDV headers, which are connected with the instrument volume by a two-inch pipe, have a drain rate that is less than the instrument volume drain rate, such in-leakage might go undetected by the existing alarm or scram instruments. Thus, failure in the nonessential control air system and resulting degraded air pressure could result in a significant and undetected increase in SDV in-leakage and could lead to a loss of scram capability.

As Ms. Quigg also correctly notes, a memorandum dated August 22, 1980 from Denwood Ross, Director of the NRC Division of Systems Integration to me, comments that "this postulated scenario, while unlikely, has generic implications because the majority of the operating BWR's have hydraulic configurations similar to the Browns Ferry Plant." Accordingly, Mr. Michelson's concern was reviewed and addressed in Supplement 3 to IEB 80-17 which was issued on August 22, 1980. Supplement 3 states, in pertinent part:

NRC staff evaluation of a potential single failure mechanism of the control rod drive control air system has identified the need for licensee actions in addition to those requested by IEB 80-17 and supplements 1 and 2.

...[The concern] involves gradual or potential loss of control air system pressure, which could cause partial opening of scram outlet valve without rod motion.

Supplement 3 states further that licensees should, within five days, verify that procedures are in effect to:

- a. Require an immediate manual scram on low control rod drive air pressure with a minimum of 10 psi margin above the opening pressure of the scram outlet valves.

b. Require an immediate manual scram in event of (1) multiple rod drift in alarms or (2) a marked change in the number of control rods with high temperature alarms.

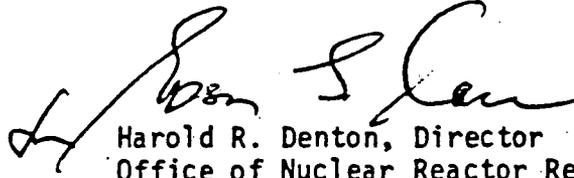
From our reading of Ms. Quiggs' petition, the petition appears to have been filed without knowledge or recognition of the provisions of Supplement No. 3 of IEB 80-17 which address the concerns expressed in her petition. I believe the administrative procedures required by Supplement No. 3 provide an effective basis for continued safe operation of the plants until additional remedial measures are in place. For the long term, additional plant modifications to prevent unacceptable interactions between the control rod drive and non-essential control air systems are under current review.

III.

Based on the foregoing I have determined that there is reasonable assurance Dresden Station Units 2 and 3 and Quad Cities Station Units 1 and 2 can continue to operate without undue risk to the public health and safety prior to the installation of continuous SDV monitoring equipment on December 1, 1980. Consequently, Ms. Quigg's request for an order to immediately shut down the named facilities is denied.

A copy of this decision will be placed in the Commission's Public Document Room at 1717 H Street, NW., Washington, D. C. 20555 and in the local public document rooms at the Morris Public Library, 604 Liberty Street, Morris, Illinois 60451 (for the Dresden Station) and the Moline Public Library, 504 17th Street, Moline, Illinois 61265 (for the Quad Cities Station).

Additionally, a copy of this decision will be filed with the Secretary of the Commission for review by the Commission in accordance with 10 CFR Section 2.206(c) of the Commission's regulations.

A handwritten signature in black ink, appearing to read "Harold R. Denton", is written over the typed name and title.

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland
this 26th day of November, 1980