

CONSUMERS POWER COMPANY
Docket 50-155
Request for Change to the Technical Specifications
License DPR-6

For the reasons hereinafter set forth, it is requested that the Technical Specifications contained in the Facility Operating License DPR-6, Docket 50-155, issued to Consumers Power Company on May 1, 1964, for the Big Rock Point Plant be changed as described in Section I below:

I. Changes

Delete the last sentence from paragraph 5.2.2(a) (iv) which reads:

"Minimum withdraw time shall be 23 seconds."

II. Discussion

The subject Technical Specification change request is a supplement to that proposed on November 1, 1974. Because of the long time frame that has passed since the original request was made, a detailed investigation into the history of the item has been performed. The following paragraphs contain a detailed synopsis of the correspondence that has transpired on this issue.

History

On April 3, 1974, Consumers Power Company sent abnormal occurrence AO-3-74 to the US Atomic Energy Commission detailing two occasions when the hot, as found, withdrawal times of seven control rod drives were less than the 23 seconds allowed by the Technical Specifications.

A follow-up letter was sent on May 1, 1974, describing the difficulty the Plant has had in meeting the 23 second withdrawal criteria. In order to optimize drive operation, the withdrawal time must be no greater than 36 seconds in the cold condition. When tested hot, these same drives generally withdraw in the range of 23 to 30 seconds, but occasionally faster than 23 seconds. In an attempt to reduce the probability of this occurrence, a commitment was made to set the withdraw rates at the slowest rate possible. Following system heatup, the drives would be retested. Any drive found to withdraw faster than 25 seconds would then be readjusted. This test was to be performed each reactor start-up until additional corrective action could be taken. The memorandum then described that the FHSR had evaluated the hot standby start-up accident which assumed continuous withdrawal of a control rod in 23 seconds and a total reactivity addition of 4.2% $\Delta k/k$.

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It then pointed out the analytical and administrative controls that prevent the hot start-up accident from occurring, and that even if it did, it would not approach the limiting conditions assumed in the analysis.

On May 15, 1974, abnormal occurrence AO-13-74 identified six control rod drives that withdrew in less than 23 seconds and confirmed the commitment of the May 1, 1974 correspondence.

Abnormal occurrence AO-17-74 was forwarded on June 13, 1974. Three drives were withdrawn in less than 23 seconds. Again, the commitment of the May 1, 1974 memorandum was confirmed.

In a letter dated July 19, 1974, the Safety Audit and Review Board concluded that if continuous withdrawal could be prevented, the 23 second limit would not be a concern. Consumers Power Company then committed to disabling the run mode during start-up and at power until a Technical Specification change concerning the 23 second limit could be submitted.

On November 1, 1974, Consumers Power Company forwarded a Technical Specification change request to eliminate the 23 second withdrawal rate limit and to perform a test to determine the maximum achievable withdrawal rate. The proposed test was to be performed prior to final approval of the change. The attached analysis evaluated the consequences of a rod drop accident for the reload G mixed oxide core loading for rod worths of 2.0 and 3.0% Δk and was intended to supersede the start-up accident analysis outlined in the FHSR. The rod drop accident was evaluated because the velocities were believed to be greater than those achievable in the run mode. The determination of the maximum achievable withdrawal rate was intended to verify this assumption.

Abnormal occurrence AO-3-75 was sent to the US Nuclear Regulatory Commission, January 31, 1975, listing four drives that violated the 23 second criteria. This letter referenced previous correspondence of July 19, 1974, and the submittal of November 1, 1974.

Additional correspondence of February 5, 1975, clarified that the intent of the request to perform the test had nothing to do with potential 10 CFR 50.59 implications, but rather with the definition of "power operation". The letter stated that the "literal interpretation" had been deemed unnecessary by the NRC and that Consumers Power Company would proceed with the test without NRC approval.

On February 28, 1975, a letter concluded that the February 5 memorandum had been lost and new copies were forwarded.

The test performed to determine the maximum achievable withdraw velocity was performed and forwarded in correspondence dated July 1, 1975. The fastest withdrawal was 13.5 seconds (or 0.42 ft/sec). Because the Technical Specification request concluded that a 3.0% Δ/k rod could be withdrawn at up to 0.82 ft/sec and not cause clad damage, it was considered reasonable that the 23 second criteria could be deleted. The memorandum concluded by requesting that the change be approved.

Correspondence dated September 23, 1977, forwarded Licensee Event Report RO-77-36 which stated that three drives withdrew in less than 23 seconds. Because of the submittals of November 1, 1974, and July 1, 1975, the event was considered to have no significant safety hazard.

On November 29, 1977, LER RO-77-45 reported a drive that had been observed to withdraw with excessive speed. Testing was repeated and the condition would not reoccur. The cause was attributed to Pressure Control Valve NC-18 and the Rod Drive Pump Discharge Relief Valve. Valve repairs were completed and a commitment was made to inspect the drive internals and to reevaluate the withdrawal speed submittals of November 1, 1974, and July 1, 1975.

A Technical Specification change request was initiated on July 28, 1978 to increase the surveillance interval for performing the withdrawal speed from six months to each refueling outage. The request states that the disabling of the run mode at power makes it impossible to perform this test without shutting down. The letter went on to point out these temporary measures were to be taken until the NRC approved the submittal of November 1, 1974, at which point the issue would no longer present a concern.

Amendment 20 to the Technical Specifications increasing the surveillance interval from six months to each refueling outage was approved September 1, 1978.

On October 19, 1978, Consumers Power Company informed the NRC that through discussions with General Electric and subsequent tests it had been concluded that coupling integrity could not be reliably verified with the run mode disabled. This memorandum was sent to inform the commission verification of coupling integrity is considered important and since previous analysis had shown withdrawal times much less than 23 seconds are not a concern, the continuous run feature had been

enabled. The letter concluded with a request to approve the change request of November 1, 1974.

LER RO-78-42, documenting the above letter, was forwarded on October 26, 1978.

Beyond this point, written correspondence between the Company and the Commission concerning this subject appears to have ceased. Apparently in late 1983, the NRC asked Consumers Power Company if they were still interested in pursuing this change request. The Big Rock Point Plant Review Committee said yes and an internal request was generated by the Nuclear Licensing Department for the Operational Reactor Physics Administrator to evaluate the effect of the new "H" fuel with regard to the previous change request. After making some conservative assumptions, it was concluded that in the event of a rod drop accident clad damage would not occur.

General

The Technical Specification change request submitted on November 1, 1974, contained extremely conservative assumptions and is in itself considered more than adequate support for the deletion of the 23 second withdrawal time limitation. However, Consumers Power Company has elected to perform additional analysis in support of this change request. The subject analysis, which is included as Attachment II, also assumed the "rod drop accident" to be the most limiting condition. This analysis contains more reasonable assumptions than the initial request and was evaluated against the acceptance criteria of the Standard Review Plan (NUREG-0800), Chapter 15, Section 15.4.9, Part II.

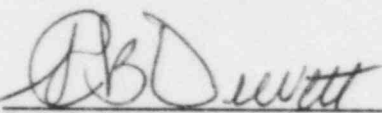
III. Analysis of No Significant Hazards Consideration

This change request does not involve a significant increase in the probability or consequences of an accident previously evaluated because, as shown in the attached analysis, even in the event of a rod-drop accident, the acceptance criteria in NUREG 0800, Standard Review Plan, Section 15.4.9, Part II are satisfied. It does not create the possibility of a new or different kind of accident from any accident previously evaluated because, as shown in the attached analysis, the worst case incident is the rod-drop accident which has been previously evaluated. It also does not involve a significant reduction in a margin of safety because, as shown in the attached analysis, the 23 second minimum withdrawal time is not necessary to prevent fuel cladding damage. Consequently this proposed change does not involve a significant hazards consideration.

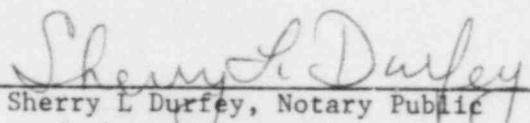
IV. Conclusions

The Big Rock Point Plant Review Committee has reviewed this Technical Specification Change Request and has determined that the change does not involve an unreviewed safety question and therefore involves no significant hazards consideration. This change has also been reviewed under the cognizance of the Nuclear Safety Board. A copy of this Technical Specification Change Request has been sent to the State of Michigan official designated to receive such amendments to the Operating License.

CONSUMERS POWER COMPANY

By 
R B DeWitt, Vice President
Nuclear Operations

Sworn and subscribed to before me this 3rd day of September 1985.


Sherry L. Durfey, Notary Public
Jackson County, Michigan
My commission expires November 5, 1986.

SHERRY LYNN DURFEY
Notary Public, Jackson County, Mich.
My Commission Expires Nov. 5, 1986