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December 17, 2001
L-01-145

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Mail Station P1-137
Washington, DC 20555-0001

Subject: Beaver Valley Power Station, Unit No. 2
Docket No. 50-412, License No. NPF-73
Request for Exemption from the Requirements of 10 CFR 54.17(c)

Pursuant to 10 CFR 54.15 and 10 CFR 50.12, the FirstEnergy Nuclear Operating Company (FENOC) requests an exemption from the schedular requirement of 10 CFR 54.17(c), which specifies that, "An application for a renewed license may not be submitted to the Commission earlier than 20 years before the expiration date of the operating license currently in effect." FENOC is planning to submit a joint License Renewal Application (LRA) to the NRC for the renewal of the operating licenses for the Beaver Valley Power Station, Units 1 and 2, in September 2004. However, with the existing operating license for Beaver Valley Unit 2 expiring in 2027, satisfaction of the 20-year requirement for Unit 2 will not be attained prior to the planned submission date. Thus, an exemption from the requirements of 10 CFR 54.17(c) is necessary for FENOC to file a joint LRA for Beaver Valley Units 1 and 2 in 2004.

10 CFR 50.12 allows the U. S. Nuclear Regulatory Commission (NRC) to grant exemptions if application of the regulation is not necessary to achieve the underlying purpose of the rule. The underlying purpose of 10 CFR 54.17(c), as identified in the Statement of Considerations (SOC) for the current License Renewal Rule (Reference 1), is to ensure that substantial operating experience is accumulated by a licensee before it submits a renewal application. By the date of submission, September 2004, the Beaver Valley site will have collective nuclear operating experience of over 40 years. This experience base meets the underlying purpose of the rule.

This exemption request is similar in nature to the exemptions requested previously by the Duke Energy Corporation and the Florida Power and Light Company (References 2 and 3, respectively). Those exemption requests were subsequently approved by the NRC in 1999 and 2001, respectively (References 4 and 5, respectively).

The background, supporting bases, and justifications for FENOC's exemption request are provided in the enclosed attachment. FENOC requests NRC review and approval of

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Beaver Valley Power Station, Unit No. 2

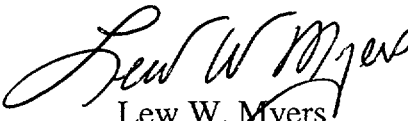
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this exemption request by March 2002. If the NRC has any questions regarding this correspondence, please contact Mr. T.S. Cosgrove, Regulatory Affairs Manager, at 724-682-5203.

Sincerely,



Lew W. Myers

Attachment

c: Mr. L. J. Burkhart, Project Manager
Mr. D. M. Kern, Sr. Resident Inspector
Mr. H. J. Miller, NRC Region I Administrator

- References:
1. Statement of Considerations, Nuclear Power Plant License Renewal, 56 FR 64943 dated December 13, 1991, and 60 FR 22461, dated May 8, 1995.
 2. Letter from the Duke Energy Corporation to the NRC, M.S. Tuckman to Document Control Desk, dated June 22, 1999, "Request for Exemption Pursuant to 10 CFR 54.15 and 50.12 - Exemption to the Scheduler Requirements of CFR 54.17(c)."
 3. Letter from the Florida Power and Light Company to the NRC, Rajiv S. Kundalkar to Document Control Desk, dated October 30, 2000, "St. Lucie Unit 2, Docket No. 50-389, Request for Exemption from the Scheduler Requirements of 10 CFR 54.17(c)."
 4. Letter from the NRC dated October 1, 1999, F. Rinaldi to H.B. Barron, "McGuire Nuclear Station, Unit 2 - Issuance of Exemption to 10 CFR 54.17(c) Regarding Schedule for License Renewal Application (TAC MA5914)."
 5. Letter from the NRC dated February 27, 2001, K.N. Jabbour to T.F. Plunket, "St. Lucie Plant, Unit No. 2, Exemption from the Requirements of 10 CFR Part 54, Section 54.17(c) Regarding Schedule for License Renewal Application (TAC MB0418)."

**FIRSTENERGY NUCLEAR OPERATING COMPANY (FENOC)
REQUEST FOR EXEMPTION
FROM THE REQUIREMENTS OF 10 CFR 54.17(c)**

I. Executive Summary

10 CFR Part 54 sets forth the requirements for the renewal of operating licenses for nuclear power plants. 10 CFR 54.17(c) requires that an application for a renewed license "not be submitted to the Commission earlier than 20 years before the expiration of the operating license currently in effect." Based on this limitation, Beaver Valley Unit 2 would not be able to submit an application for license renewal prior to May 28, 2007. The underlying purpose of this regulation is to ensure that an applicant for license renewal has accumulated sufficient operating experience such that an adequate assessment of age-related degradation of plant structures, systems, and components may be made. 10 CFR 54.15 authorizes exemptions to 10 CFR Part 54 in accordance with 10 CFR 50.12.

FENOC hereby requests an exemption from the requirement of 10 CFR 54.17(c) pursuant to 10 CFR 54.15 and 10 CFR 50.12. FENOC requests this exemption in order to process and submit the Beaver Valley Unit 2 License Renewal Application (LRA) concurrent with the Beaver Valley Unit 1 LRA. Currently, FENOC plans to submit the Beaver Valley Units 1 and 2 LRAs in September 2004. Without this exemption, the LRA for Beaver Valley Unit 2 cannot be filed prior to May 28, 2007. Currently, Beaver Valley Unit 1 has over 25 years and Beaver Valley Unit 2 has over 14 years of operating experience. The following sections of this request demonstrate, pursuant to 10 CFR 50.12, that special circumstances exist to warrant the approval of this request; namely, that the application of 10 CFR 54.17(c) to Beaver Valley Unit 2 is not necessary to achieve the underlying purpose of the rule.

Additionally, because the two Beaver Valley units are similar in design, operation, maintenance, and environments, many of the aging analyses to be performed for the structures, systems, and components of Unit 1 will be directly applicable to the structures, systems, and components of Unit 2. Thus, submitting combined LRAs will result in a substantial cost savings as opposed to the cost of preparing and submitting separate applications at different times. The NRC resources are more effectively utilized from the efficiencies gained by reviewing concurrent applications for these two similar plants as opposed to reviewing separate applications.

This exemption request seeks schedular relief only. FENOC does not seek an exemption from any of the substantive requirements of 10 CFR Part 54 in connection with the preparation of the Beaver Valley Units 1 and 2 LRA. FENOC will satisfy the pertinent requirements of 10 CFR Part 54 when preparing and submitting the Beaver Valley Units 1 and 2 LRA. Public health and safety will not be adversely affected by the granting of this exemption.

II. Background

FENOC is the holder of record for the operating licenses for Beaver Valley Units 1 and 2. Beaver Valley Units 1 and 2 are pressurized water reactors (PWRs) with the Nuclear Steam Supply System (NSSS) supplied by the Westinghouse Electric Corporation. The site Architect Engineer and plant constructor was the Stone & Webster Engineering Corporation.

The licensed thermal capacity for each unit is 2689 Megawatts (MWt). The operating license for Unit 1 was initially issued in January 1976. Commercial operation of Unit 1 was initiated in October 1976. The operating license for Unit 2 was initially issued in May 1987, with commercial operation initiated in November 1987.

The Unit 1 operating license expiration date is January 29, 2016. The Unit 2 operating license has an expiration date of May 27, 2027. Both the Unit 1 and Unit 2 operating licenses represent a licensed operating term of 40 years for their respective units.

III. Basis for Exemption Request Pursuant to 10 CFR 50.12

10 CFR Part 54 governs the issuance of renewed operating licenses for nuclear power plants. The filing of LRAs is addressed in 10 CFR 54.17. 10 CFR 54.17(c) states: "An application for a renewed license may not be submitted to the Commission earlier than 20 years before the expiration of the operating license currently in effect." Since FENOC desires to file a LRA for Beaver Valley Unit 2 prior to May 28, 2007 (the date after which the 20-year requirement would be satisfied), an exemption from the requirements of 10 CFR 54.17(c) is necessary. 10 CFR 54.15 of the license renewal rule states: "Exemptions from the requirements of this part may be granted by the Commission in accordance with 10 CFR 50.12."

10 CFR 50.12(a) states, in pertinent part:

The Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of the regulations of this part, which are-

- (1) Authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security.
- (2) The Commission will not consider granting an exemption unless special circumstances are present. Special circumstances are present whenever...
 - (ii) Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule...

The following analysis demonstrates that the requirements of 10 CFR 50.12(a)(1) are satisfied and that the special circumstances of 10 CFR 50.12(a)(2)(ii) are applicable.

A. 10 CFR 50.12(a)(1)

This paragraph of the regulation requires an exemption request to satisfy three requirements: (1) the request must be authorized by law, (2) the request must not present an undue risk to public health and safety, and (3) the request must be consistent with the common defense and security. How this exemption request satisfies these three requirements is discussed below.

1. Authorized By Law

10 CFR 54.17(c) is a schedular requirement and was adopted solely at the discretion of the NRC in the exercise of its rulemaking authority under Section 161 of the Atomic Energy Act, 42 U.S.C. 2201. No statute required the NRC to adopt this provision. No other regulation of either the NRC or another agency required the NRC to adopt this provision. The NRC has authority under 10 CFR 50.12 to grant exemptions from the requirements of NRC regulations. Therefore, no statutory or regulatory provision precludes the Commission from granting the requested exemption upon a proper showing. Specifically, 10 CFR 54.15 states that the NRC may grant exemptions from the requirements of 10 CFR Part 54 in accordance with 10 CFR 50.12. Accordingly, this requested exemption is "authorized by law," as required by 10 CFR 50.12(a)(1).

Further, when the current license renewal rule was promulgated in 10 CFR Part 54, the NRC indicated that it would consider an exemption from 10 CFR 54.17(c) if sufficient information is available on a plant-specific basis to justify submission of an application to renew a license before completion of 20 years of operation.¹ The NRC has granted similar exemptions to Duke Energy Corporation² and Florida Power and Light Company.³

2. No Undue Risk to Public Health & Safety

The granting of this exemption poses no risk to public health and safety. This exemption is for schedular relief only. Granting an exemption from the requirements of 10 CFR 54.17(c) only relieves FENOC of the requirement to wait

¹ 60 Federal Register at 22488, May 8, 1995.

² Letter, NRC (Frank Rinaldi) to Duke Energy Corporation (H. B. Barron), "McGuire Nuclear Station, Unit 2 - Issuance of Exemption to 10 CFR 54.17(c) Regarding Schedule for License Renewal Application," October 1, 1999.

³ Letter, NRC (Kahtan N. Jabbour) to Florida Power & Light Company (T. F. Plunket), "St. Lucie Plant, Unit No. 2, Exemption from the Requirements of 10 CFR Part 50, Section 54.17(c) Regarding Schedule for License Renewal Application," February 27, 2001.

until at least May 28, 2007, before submitting an application for renewal of the Beaver Valley Unit 2 operating license. The substantive requirements of the license renewal process as provided for in 10 CFR Part 54 still apply to any LRA to be submitted for Beaver Valley Unit 2. The intent of 10 CFR 54.17(c) is to ensure that sufficient plant operating experience is accrued prior to any application for license renewal. The 10 CFR 50.12(a)(2)(ii) discussion below provides the details and basis for why sufficient operating experience is currently available to support a LRA for Beaver Valley Unit 2.

3. Common Defense and Security

The granting of this exemption request is consistent with the common defense and security. As noted above, this exemption request is for schedular relief only. Other NRC requirements pertaining to the renewal of the Beaver Valley Unit 2 operating license will be satisfied in the Beaver Valley Units 1 and 2 LRAs. Further, there are no security or safeguards issues raised by this proposed exemption.

B. 10 CFR 50.12(a)(2)(ii)

10 CFR 50.12(a)(2) lists six "special circumstances" for which an exemption may be granted. Pursuant to the regulation, it is necessary for at least one of these special circumstances to be present in order for the NRC to consider granting an exemption request. The special circumstance that is applicable to this exemption request is found in 10 CFR 50.12(a)(2)(ii), which states:

"Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule."

The 20-year requirement of 10 CFR 54.17(c) was a part of the original Part 54 rule as published in 1991. When this rule was first issued the NRC stated that its purpose was "to ensure that substantial operating experience is accumulated by a licensee before it submits a renewal application."⁴ This purpose was reiterated in the Safety Evaluation accompanying the 10 CFR 54.17(c) exemption granted to Duke Energy Corporation, wherein the NRC stated:

"The Commission's basis for establishing the 20-year limit contained in Section 54.17(c) is discussed in the 1991 Statements of Consideration for Part 54 (56 FR 64963). The limit was established to ensure that substantial operating experience was accumulated by a licensee before a renewal

⁴ 56 Federal Register at 64963, December 13, 1991.

application is submitted such that any plant-specific concerns regarding aging would be disclosed. . .”⁵

When developing the Part 54 rule change issued in 1995, the NRC considered revising the 20-year requirement and solicited public comments on the subject. Two commenters, the Nuclear Energy Institute and the U.S. Department of Energy, concluded that some plants might have sufficient operating history and plant experience to provide reasonable assurance that aging concerns can be identified with less than 20 years of operation.⁶ In response to the public comments, the NRC noted that it would not revise the 20-year requirement, but the Commission recognized that some license renewal applicants might have sufficient basis for an exemption:

“The Commission is willing to consider, however, plant-specific exemption requests by those applicants who believe they may have sufficient information available to justify applying for a renewal license prior to 20 years from the expiration date of the current license.”⁷

Although the 20-year requirement of 10 CFR 54.17(c) is specifically applicable to the plant applying for a renewed operating license, the operating experience available to a license renewal applicant is not limited solely to the operating experience accumulated by that plant. In the Supplementary Information accompanying the 1991 publication of the rule, the NRC clearly endorsed the use of operating experience available from industry sources when it made the following comment with respect to the 20-year rule:

“...both renewal applicants and the NRC will have the benefit of operational experience from the nuclear industry and are not limited to information developed solely by the utility seeking a renewed license.”⁸

Based on this background, it must be demonstrated that for Beaver Valley Unit 2 sufficient operational experience is available for use in the license renewal process. As indicated above, this operational experience is not limited to that accumulated by Beaver Valley Unit 2; it may also include operational experience gained from Beaver Valley Unit 1 and from the nuclear industry as well. The discussion that follows outlines how

⁵ Safety Evaluation by the Office of Nuclear Reactor Regulation Exemption from 10 CFR 54.17(c) Regarding Schedule to Apply for a Renewed Operating License - Catawba Nuclear Station, Units 1 and 2 Docket Nos. 50-413 and 50-414 and McGuire Nuclear Station, Unit 2 Docket No. 50-370, October 1, 1999.

⁶ Although the 20-year requirement of 10 CFR 54.17(c) is written with respect to years remaining until expiration of a plant's operating license, the focus of this provision is on actual years of operation under the current operating license. Since an operating license is typically issued for a 40-year period (the maximum period allowed by 10 CFR 50.51), the rule effectively requires applicants to have accumulated at least 20-years of operating experience prior to the submittal of a license renewal application.

⁷ 60 Federal Register at 22488, May 8, 1995.

⁸ 56 Federal Register at 64963, December 13, 1991.

sufficient operating experience and history is available to support an exemption from 10 CFR 54.17(c) for Beaver Valley Unit 2.

Beaver Valley Unit 2 is the sister unit to Beaver Valley Unit 1. The two units currently have a combined operating history of over 39 reactor-years⁹. Beaver Valley Unit 1 operating experience is directly applicable to Beaver Valley Unit 2 since the two units are similar in design, organization, use of operating experience, and environments.

1. Plant Design

Both the Beaver Valley Unit 1 and Unit 2 NSSS were designed by the Westinghouse Electric Corporation as 2652 MWt PWR plants. The plants were later licensed to 2689 MWt. The site Architect Engineer and plant constructor was the Stone & Webster Engineering Corporation. The materials of construction for Beaver Valley Unit 2 structures, systems, and components are similar to those used on the corresponding Beaver Valley Unit 1 structures, systems, and components.

The Beaver Valley Unit 2 UFSAR, Section 1.3, "Comparison Tables," provides a comparison of Beaver Valley Unit 2 with other units, including Beaver Valley Unit 1. This similarity with Beaver Valley Unit 1 is further evidenced in Beaver Valley Unit 2 UFSAR Table 1.3-1, which compares several key plant operating parameters and system designs of Beaver Valley Unit 2 with those of Beaver Valley Unit 1. These include the NSSS, Engineered Safety Features, Containment Concepts, Instrumentation Systems, Electrical Systems, Waste Management Systems, et. al. As shown in Table 1.3-1 the design of Beaver Valley Unit 2 is very similar to Unit 1. Instrumentation and Controls between the two units are functionally similar which means they are similar in the basic operating or safety functions of the compared systems.

The NRC Safety Evaluation Report for Beaver Valley Unit 2¹⁰, Section 1.3, "Comparison with Similar Facility Designs," also recognizes the similarity and states: "The principal features of the design of Beaver Valley Unit 2 are similar to those that have been evaluated and approved previously by the staff for other nuclear power plants now under construction or in operation, especially Beaver Valley Unit 1 . . ."

⁹ Unit 1 began commercial operation on October 1, 1976 and Unit 2 on November 17, 1987

¹⁰ NUREG 1057, "Safety Evaluation Report Related to the Operation of Beaver Valley Power Station, Unit 2"

2. Plant Organization

The Beaver Valley Site Organization is described in Section 13.1.2 of the Unit 2 UFSAR. As shown in UFSAR Figure 13.1-2, the only unit-specific organization is the operations area. However, the Superintendent for Unit 1 Operations and the Superintendent for Unit 2 Operations both report to the Plant General Manager¹¹ who reports to the Beaver Valley Senior Vice President. Thus, overall responsibility for the safe and efficient operation of Beaver Valley Units 1 and 2 is effectively under one organization.

Additionally, because of the similarities between Beaver Valley Units 1 and 2, personnel of the various plant organizations (e.g., Maintenance and Engineering) may be assigned work activities on both units. These plant organizations are not divided into separate Unit 1 and Unit 2 groups.

Furthermore, many of the procedures that govern site activities are not unit-specific, such as the Beaver Valley Plant Condition Report procedure¹², which governs the documentation, analysis, and corrective action associated with plant nonconformances and other conditions of concern.

3. Use of Operating Experience

Operating experience from industry sources such as INPO, the NRC, and nuclear vendors is addressed in site procedures. For example, the 10 CFR 50.65 maintenance rule implementing procedure¹³ considers industry operating experience in the establishment of goals and initial program scoping. In addition, the implementation guidance for the Condition Report procedure¹⁴ specifically addresses the process for reviewing industry operating experience as part of the corrective action program.

In addition to industry experience, FENOC will use its own operating experience in preparation of the LRA. Information from the operation of Beaver Valley Unit 1 (which has in excess of twenty years of operation), combined with the actual years of operation of Unit 2, will provide the functional equivalent of twenty years of operating experience required by 10 CFR 54.17(c). Therefore, concurrent LRAs for Beaver Valley Units 1 and 2 submitted in 2004 will reflect combined periods of operating experience that substantially exceed the twenty-year period deemed sufficient by the NRC.

¹¹ FSAR Figure 131-2 shows the Superintendents for Unit 1 and Unit 2 Operations reporting to the Manager, Nuclear Operations who reports to the Plant General Manager. Currently, the same individual is fulfilling the positions of the Manager, Nuclear Operations and the Plant General Manager.

¹² NOP-LP-2001, "Condition Report Process"

¹³ NPDAP 8.30, "Maintenance Rule Program"

¹⁴ Beaver Valley Condition Report Reference Guide for NOP-LP-2001

4. Plant Environments

Beaver Valley Unit 2 is physically located adjacent to Beaver Valley Unit 1. Because of its shared location and similar plant design, the internal and external environments of Beaver Valley Unit 2 are similar to those of Beaver Valley Unit 1. As such, plant aging effects experienced on Beaver Valley Unit 1 are also likely to be experienced on Beaver Valley Unit 2.

IV. Conclusion

As demonstrated above, the Beaver Valley Unit 1 operating experience is directly applicable to Beaver Valley Unit 2. Furthermore, Beaver Valley Unit 2, as evidenced by the similarities in design, organization, use of operating experience, and environments noted above, incorporates operational experience gained from Beaver Valley Unit 1, as well as that gained from industry sources. This accumulated operating experience is more than sufficient to achieve the underlying purpose of 10 CFR 54.17(c).

This exemption request provides sufficient basis to support the issuance of an exemption from the schedular requirement of 10 CFR 54.17(c). As required by 10 CFR 50.12, the requested exemption is authorized by law, presents no undue risk to public health and safety, is consistent with the common defense and security, and is supported by "special circumstances." Between the two Beaver Valley units, over 39 reactor-years of experience are currently available to support the preparation and review of an application for license renewal. This accumulated operating experience is more than enough to satisfy the underlying purpose of the license renewal schedular requirement. In addition, operating experience from industry sources will be used to the extent it is available and applicable in preparation of the LRA.

FENOC hereby requests NRC authorization to permit the submittal of a LRA for Beaver Valley Unit 2, concurrent with that for Beaver Valley Unit 1, prior to Unit 2 meeting the 10 CFR 54.17(c) schedular requirement. Delaying the license application filing for Beaver Valley Unit 2 until May 2007 would provide minimal gain in operating experience and would not significantly alter the technical contents and conclusions of the application.

This request is similar to and consistent with the exemption requests made by Duke Energy Corporation and Florida Power and Light Company and granted by the NRC.