ATTACHMENT C

MARKED-UP PAGES FOR DRESDEN TECHNICAL SPECIFICATIONS

2.0 SAFETY LIMITS AND LIMITING SAFETY SYSTEM SETTINGS

2.1 SAFETY LIMITS

THERMAL POWER, Low Pressure or Low Flow

2.1.A THERMAL POWER shall not exceed 25% of RATED THERMAL POWER with the reactor vessel steam dome pressure less than 785 psig or core flow less than 10% of rated flow.

APPLICABILITY: OPERATIONAL MODE(s) 1 and 2.

ACTION:

With THERMAL POWER exceeding 25% of RATED THERMAL POWER and the reactor vessel steam dome pressure less than 785 psig or core flow less than 10% of rated flow, be in at least HOT SHUTDOWN within 2 hours and comply with the requirements of Specification 6.7.

THERMAL POWER, High Pressure and High Flow

for Unit 3 and 1.09 for Unit 2

2.1.B The MINIMUM CRITICAL POWER RATIO (MCPR) shall not be less than 1.08 with the reactor vessel steam dome pressure greater than or equal to 785 psig and core flow greater than or equal to 10% of rated flow. During single recirculation loop operation, this MCPR limit shall be increased by 0.01.

APPLICABILITY: OPERATIONAL MODE(s) 1 and 2.

ACTION:

With MCPR less than the above applicable limit and the reactor vessel steam dome pressure greater than or equal to 785 psig and core flow greater than or equal to 10% of rated flow, be in at least HOT SHUTDOWN within 2 hours and comply with the requirements of Specification 6.7.

5.3 REACTOR CORE

Fuel Assemblies

5.3.A The reactor core shall contain 724 fuel assemblies[2]. Each assembly consists of a matrix of Zircaloy clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide as fuel material. The assemblies may contain water rods or a water box. Limited substitutions of Zircaloy or ZIRLO or stainless steel filler rods for fuel rods, in accordance with NRC-approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff-approved codes and methods, and shown by tests or analyses to comply with all fuel safety design bases[3]. A limited number of lead test assemblies that have not completed representative testing may be placed in non-limiting core regions.

Control Rod Assemblies

5.3.B The reactor core shall contain 177 cruciform shaped control rod assemblies. The control material shall be boron carbide powder (B_4C) and/or hafnium metal. The control rod assembly shall have a nominal axial absorber length of 143 inches.

and Dresden Unit 2, Cycle 16

~~1 ATRIUM-9B fuel with exception of lead test assemblies is only allowed in the reactor core in Operational Modes 3, 4 and 5, and with no more than one control rod withdrawn, for Unit 2 only.~~

1. ~~2~~ Operation in all modes with ATRIUM-9B fuel is allowed for Dresden, Unit 3, Cycle 15, only.

~~3 The design bases applicable to ATRIUM-9B fuel are those which are applicable to Operational Modes 3, 4, and 5, for Unit 2 only.~~

ATTACHMENT D

EVALUATION OF SIGNIFICANT HAZARDS CONSIDERATION

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EVALUATION OF SIGNIFICANT HAZARDS CONSIDERATIONS

ComEd has evaluated the proposed Technical Specification amendment and determined that it does not represent a significant hazards consideration. Based on the criteria for defining a significant hazard consideration established in 10 CFR 50.92(c), operation of Dresden Unit 2 in accordance with the proposed amendments will not represent a significant hazards consideration for the following reasons:

These changes do not:

1. **Involve a significant increase in the probability or consequences of an accident previously evaluated.**

   The probability of an evaluated accident is derived from the probabilities of the individual precursors to that accident. The consequences of an evaluated accident are determined by the operability of plant systems designed to mitigate those consequences. Limits have been established consistent with NRC approved methods to ensure that fuel performance during normal, transient, and accident conditions is acceptable. This change does not affect the operability of plant systems, nor does it compromise any fuel performance limits.

   Revision to Cycle Specific Footnotes for Dresden 2 Cycle 16 Operation with ATRIUM-9B

   The revisions to the footnotes in Section 5.3 have no implications for accident analysis or plant operations. The purpose of the revisions to the footnotes is to allow operation of Dresden Unit 2 Cycle 16 with an interim conservative approach to calculating the MCPR Safety Limit. This is the same approach that was NRC approved for use for Dresden Unit 3 Cycle 15 and Quad Cities Unit 2 Cycle 15 (References 4, 5, 6 and 7). The Dresden Unit 2 Cycle 16 MCPR Safety Limit was calculated using an interim additive constant uncertainty. The MCPR Safety Limit is used in the determination of the cycle's MCPR Operating Limit. The MCPR Operating Limit ensures that the MCPR Safety Limit is not violated for any anticipated operational occurrence. This revision does not affect any plant equipment or processes; therefore, there is no alteration in the probability or consequences of an accident previously evaluated.

   Revision to the MCPR Safety Limit

   Changing the MCPR Safety Limit for Dresden Unit 2 from 1.08 to 1.09 will not increase the probability of an accident previously evaluated. Additionally, operational MCPR limits will be applied that will ensure the MCPR Safety Limit is not violated during all modes of operation and anticipated operational occurrences. Changing the MCPR Safety Limit will not alter any physical systems or operating procedures. The Dresden Unit 2 MCPR Safety Limit is set to 1.09, which is a

critical power ratio value where less than 0.1% of the rods in the core are expected to experience transition boiling. This application for amendment does not change the criterion of ensuring that less than 0.1% of the rods in the core are calculated to experience transition boiling when the core is at the MCPR Safety Limit. Therefore, the probability or consequences of an accident will not increase.

2. **Create the possibility of a new or different kind of accident from any accident previously evaluated.**

Creation of the possibility of a new or different kind of accident would require the creation of one or more new precursors of that accident. New accident precursors may be created by modifications to the plant configuration or changes in allowable modes of operation. Other than the use of a full reload of ATRIUM-9B fuel in Dresden Unit 2 Cycle 16 in Modes 1 and 2, this Technical Specification submittal does not involve any modifications to the plant configuration or allowable modes of operation. The operation with a full reload of ATRIUM-9B was previously approved for Dresden Unit 3 Cycle 15. The ATRIUM-9B fuel is compatible with the existing 9x9-2 fuel in the Dresden Unit 2 core. No new precursors of an accident are created and no new or different kinds of accidents are created. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Revision to Cycle Specific Footnotes for Dresden 2 Cycle 16 Operation with ATRIUM-9B

The revision to the cycle specific footnotes in Section 5.3 is necessary to allow operation of Dresden Unit 2 Cycle 16. This revision will not alter any plant systems, equipment or physical conditions of the site. Revising the footnotes in Section 5.3 allows operation with a reload of ATRIUM-9B in Modes 1 and 2 for Unit 2 Cycle 16, which has previously been approved for Dresden Unit 3 Cycle 15. This revision is based on the fact that an interim conservative additive constant uncertainty has been used to calculate the Dresden Unit 2 Cycle 16 MCPR Safety Limit. NRC approval of this interim approach in determining the Dresden Unit 2 Cycle 16 MCPR Safety Limit will ensure that fuel limits are determined and cycle specific analyses are performed for Dresden Unit 2 Cycle 16 utilizing NRC approved methods. Therefore, no new or different kinds of accidents are created from this revision.

Revision to the MCPR Safety Limit

Changing the MCPR Safety Limit will not create the possibility of a new accident from an accident previously evaluated. This change will not alter or add any new equipment or change plant modes of operation. The MCPR Safety Limit is

established to ensure that 99.9% of the rods avoid transition boiling. The new MCPR Safety Limit for Dresden Unit 2, 1.09, is greater than the current value of 1.08 and is consistent with MCPR Safety Limit calculations in support of Dresden Unit 2 Cycle 16 operation. Therefore, no new accidents are created that are different from those previously evaluated.

3. **Involve a significant reduction in the margin of safety for the following reasons:**

Revision to Cycle Specific Footnotes for Dresden 2 Cycle 16 Operation with ATRIUM-9B

The results of the analyses for Dresden Unit 2 Cycle 16 verify that, with an interim additive constant uncertainty, a MCPR Safety Limit of 1.09 is supportable with less then 0.1% of the rods predicted to experience transition boiling. Since there is sufficient margin to the amount of rods predicted to experience transition boiling, and a conservative interim approach has been used to calculated the additive constant uncertainty, removing the footnotes to enable Dresden Unit 2 Cycle 16 to operate with ATRIUM-9B fuel will not reduce the margin of safety.

Revision to the MCPR Safety Limit

Changing the MCPR Safety Limit for Dresden Unit 2 will not involve any reduction in margin of safety. The MCPR Safety Limit provides a margin of safety by ensuring that less than 0.1% of the rods are expected to be in transition boiling if the MCPR Safety Limit is not violated. The proposed Technical Specification amendment to change the MCPR Safety Limit to 1.09 supports operation of Dresden Unit 2 Cycle 16. SPC used the ANFB critical power correlation with an interim ATRIUM-9B additive constant uncertainty to perform the MCPR Safety Limit calculations.

Because a conservative method is used to apply the ATRIUM-9B additive constant uncertainty in the MCPR Safety Limit calculation, a decrease in the margin to safety will not occur due to changing the MCPR Safety Limit. The revised Dresden Unit 2 MCPR Safety Limit will ensure the appropriate level of fuel protection. Additionally, operational limits will be established based on the proposed Dresden Unit 2 MCPR Safety Limit to ensure that the MCPR Safety Limit is not violated during all modes of operation including anticipated operational occurrences. This will ensure that the fuel design safety criterion of more than 99.9% of the fuel rods avoiding transition boiling during normal operation as well as during any anticipated operational occurrence is met.

ATTACHMENT E
ENVIRONMENTAL ASSESSMENT APPLICABILITY REVIEW

ComEd has evaluated the proposed amendment against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21. It has been determined that the proposed changes meet the criteria for categorical exclusion as provided for under 10 CFR 51.22(c)(9). This conclusion has been determined because the changes requested do not pose significant hazards considerations and do not involve a significant increase in the amounts, and no significant changes in the types of any effluents that may be released off-site. Additionally, this request does not involve a significant increase in individual or cumulative occupational radiation exposure.

ATTACHMENT F

REFERENCES

1. ComEd submittal, "Quad Cities Nuclear Power Station Units 1 and 2, Dresden Nuclear Power Station Units 2 and 3, LaSalle County Nuclear Power Station Units 1 and 2, Application for Amendment Request to Facility Operating Licenses, DPR-29 and DPR-30, DPR-19 and DPR-25, and NPF-11 and NPF-18, respectively, Technical Specification Changes for Transition to Siemens Power Corporation ATRIUM-9B Fuel, Docket Nos. 50-254 and 50-265, 50-237 and 50-249, and 50-373 and 50-374, respectively," J. Hosmer to U.S. NRC, August 29, 1997.

2. ANF-1125(P), Supplement 1, Appendix D, April 1997, submitted by, "Request for Review of ANFB Critical Power Correlation Uncertainty for Limited Data Sets, ANF-1125(P), Supplement 1 Appendix D," H. D. Curet to U.S. NRC, HDC:97:032, April 18, 1997.

3. "ANFB Critical Power Correlation," ANF-1125(P)(A) with Supplements 1 and 2, Advanced Nuclear Fuels Corporation, April 1990.

4. ComEd letter, "Additional Information Regarding Dresden Nuclear Power Station Unit 3 Cycle 15 Confirmation of Minimum Critical Power Ratio Safety Limit Based on Revised SPC ATRIUM-9B Additive Constant Uncertainties Operating License Nos. DPR-19 and DPR-25, NRC Docket Nos. 50-237 and 50-249," JMHLTR:97-0053, J.M. Heffley to USNRC, May 6, 1997.

5. "Quad Cities Nuclear Power Station Units 1 and 2 Exigent Application for Amendment Request to Facility Operating Licenses Pursuant to 10CFR50.91 (a)(6), DPR-29 and DPR-30, Technical Specification Changes for Revised Minimum Critical Power Ratio Safety Limit for Quad Cities Unit 2 Cycle 15, Docket Nos. 50-254 and 50-265," to U.S. NRC Document Control Desk from E. S. Kraft, ESK-97-089, April 21, 1997.

6. NRC SER related to Quad Cities Unit 2 Cycle 15, "Issuance of Amendments (TAC No M98349)," to I. Johnson from R. M. Pulsifer, May 22, 1997.

7. NRC SER related to Dresden Unit 3 Cycle 15, "Issuance of Amendments (TAC Nos. M96180 and M96181)," to I. Johnson from J. Stang, June 16, 1997.