

Commonwealth Edison Company
Dresden Generating Station
6500 North Dresden Road
Morris, IL 60450
Tel 815-942-2920



March 19, 1998

JMHLTR: #98-0077

U. S. Nuclear Regulatory Commission
Attn.: Document Control Desk
Washington, D. C. 20555-0001

SUBJECT: Dresden Nuclear Power Station Unit 2
**Exigent Amendment Request to Facility Operating License, DPR-19,
Technical Specification Submittal for Dresden Unit 2 Cycle 16,
Docket No. 50-237**

Pursuant to 10 CFR 50.91(a)(6), ComEd proposes an exigent amendment to Appendix A, Technical Specifications, of Facility Operating License DPR-19 to :

1. Change the Section 5.3 footnotes to support Dresden Unit 2 Cycle 16 operation with a reload of ATRIUM-9B fuel, and
2. Increase the Dresden Unit 2 MCPR Safety Limit to support Dresden Unit 2 Cycle 16 operation.

Revision to Section 5.3 cycle-specific footnotes for Dresden Unit 2 Cycle 16 operation with ATRIUM-9B

Based on NRC staff input during a March 1997 SPC inspection, SPC determined the need to increase the size of the critical power dryout test database used to calculate the ANFB critical power correlation additive constants for the ATRIUM-9B fuel design. SPC has increased the number of data points used to calculate the ANFB critical power correlation additive constants for the ATRIUM-9B fuel design by including additional data sets which have full length rods, 9x9 design, and inner water channels. Statistical analyses were used to determine a new ATRIUM-9B additive constant uncertainty from this expanded data set and were submitted to the NRC in of 1997 (Reference 2) for approval. //
Add

As an interim approach, until the approval of Reference 2, ComEd is applying a conservative ANFB ATRIUM-9B additive constant uncertainty of 0.029 for Dresden Unit 2 Cycle 16 MCPR Safety Limit calculations. This interim value has been used previously

9803240193 980319
PDR ADOCK 05000237
P PDR

to license ATRIUM-9B reloads for Quad Cities Unit 2 Cycle 15 and Dresden Unit 3 Cycle 15. The results of the Dresden Unit 2 Cycle 16 calculations support a MCPR Safety Limit of 1.09.

Dresden operation will be based upon the bounding additive constant uncertainty of 0.029 until NRC approval of Reference 2 with an associated approved additive constant uncertainty and subsequent approval of the ComEd outstanding Technical Specification change submittal (Reference 1). At that time, the Reference 1 Technical Specification changes will supersede the changes specified in this submittal.

To allow use of ATRIUM-9B fuel in the Dresden Unit 2 core until the Reference 2 topical and the Reference 1 Technical Specification Amendment are approved, the footnotes in Section 5.3 of the Dresden Technical Specifications must be changed to indicate that Dresden 2 Cycle 16 may also operate with a reload of ATRIUM-9B fuel.

Revision to the MCPR Safety Limit

ComEd proposes increasing the MCPR Safety Limit for Dresden Unit 2 to 1.09. The basis for revising the MCPR Safety Limit for Dresden Unit 2 is to support operation of Unit 2 Cycle 16. ComEd anticipates that a MCPR Safety Limit of 1.09 will also provide sufficient margin for future cycle specific MCPR Safety Limit calculations for Dresden Unit 2.

This proposed exigent amendment is being submitted to support the April 12, 1998 startup of Dresden Unit 2 Cycle 16. This proposed amendment is being submitted as a contingency should the SPC ANFB topical (Reference 2) and the associated ComEd Technical Specification submittal (Reference 1) not be approved within a schedule that supports startup of Dresden Unit 2 Cycle 16. Justification of the exigent conditions, in accordance with 10CFR50.91(a)(6), are provided in Section 8 of Attachment A.

This request for an exigent amendment has been reviewed and approved by ComEd On-Site and Off-Site Review in accordance with ComEd procedures.

ComEd is notifying the State of Illinois of this application for amendment by transmitting a copy of this letter and its attachments to the designated state official.

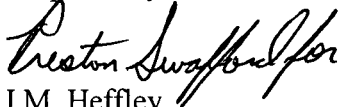
If you have any questions concerning this letter, please contact Frank Spangenberg, Regulatory Assurance Manager at (815) 942-2920, extension 3800.

USNRC
March 19, 1998

Page 3

To the best of my knowledge and belief, the statements contained above are true and correct. In some respect these statements are not based on my personal knowledge, but obtained information furnished by other Commonwealth Edison employees, contractor employees, and consultants. Such information has been reviewed in accordance with company practice, and I believe it to be reliable.

Respectfully,

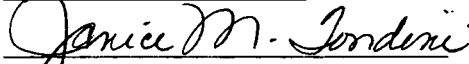
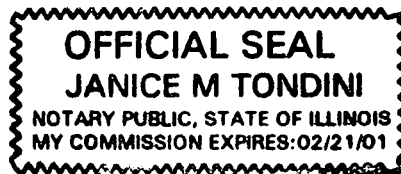


J.M. Heffley
Site Vice President
Dresden Station

Subscribed and Sworn to before me

on this 19th day of

March, 1998.


Notary Public

Attachments:

- A. Description and Evaluation of Proposed Changes
- B. Summary of Proposed Changes to the Dresden Unit 2 Technical Specifications
- C. Marked-Up Pages for Technical Specification
- D. Evaluation of Significant Hazards Considerations
- E. Environmental Assessment Applicability Review
- F. References

cc: A. Bill Beach, Regional Administrator - RIII
K. Reimer, NRC Senior Resident Inspector - Dresden
L. W. Rossbach, Project Manager - NRR
Office of Nuclear Facility Safety - IDNS

ATTACHMENT A
DESCRIPTION AND EVALUATION OF PROPOSED CHANGES

1. BACKGROUND INFORMATION

Currently, Section 5.3 of Dresden's Technical Specifications contains footnotes that allow operation with reloads of ATRIUM-9B fuel in all modes for Dresden Unit 3 Cycle 15 only. For Unit 2, operation with a reload of ATRIUM-9B fuel is only allowed in operational modes 3, 4 and 5. The purpose of this submittal is to revise these footnotes to allow Dresden Unit 2 Cycle 16 operation with a reload of ATRIUM-9B fuel and to increase the Minimum Critical Power Ratio (MCPR) Safety Limit for Dresden Unit 2 to 1.09 to support Dresden Unit 2 Cycle 16 operation. This submittal, which is an interim amendment to allow Dresden Unit 2 Cycle 16 operation prior to NRC approval of Reference 1, is written assuming Reference 1 is still under NRC review. Once Reference 1 is approved it will supersede this submittal.

Dresden Nuclear Power Station will be using Siemens Power Corporation – Nuclear Division (SPC) ATRIUM-9B fuel assemblies for Unit 2 Cycle 16 operation. SPC determined in March 1997 the need to increase the size of the critical power dryout test database used to calculate the ANFB critical power correlation additive constant uncertainty for the ATRIUM-9B fuel design. The methodology used to determine this uncertainty value is currently described in the NRC approved SPC ANFB Critical Power Correlation (Reference 3). In Reference 2, SPC determined a new additive constant uncertainty for ATRIUM-9B fuel by including additional experimental data from critical power tests of other fuel designs with many of the same design features as the ATRIUM-9B fuel design. The expanded data sets also include data that covers a wider range of pressures, flows and axial power shapes. Reference 2 was submitted to the NRC for review and approval in April of 1997.

In lieu of approval of Reference 2, an interim approach is being used to calculate the Dresden Unit 2 Cycle 16 MCPR Safety Limit. This interim approach involves using a conservative additive constant uncertainty of 0.029, which is the same additive constant uncertainty used for Dresden Unit 3 Cycle 15 and Quad Cities Unit 2 Cycle 15 (References 4, 5, 6 and 7) and conservatively bounds the additive constant uncertainty expected to result from NRC approval of Reference 2. A MCPR Safety Limit of 1.09 is supportable for Dresden Unit 2 Cycle 16 with the interim additive constant uncertainty.

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

Cycle specific footnotes were added to the Dresden Technical Specifications to support Dresden Unit 3 Cycle 15 operation with ATRIUM-9B fuel until NRC approval of Reference 2. The footnotes permit operation with ATRIUM-9B fuel utilizing a cycle specific application of an additive constant uncertainty of 0.029. The intention of these footnotes is to ensure operation of future cycles is not allowed unless a conservative interim approach is used or a generic method for calculation of the additive constant

ATTACHMENT A
DESCRIPTION AND EVALUATION OF PROPOSED CHANGES

uncertainty is approved (Reference 2). Since NRC approval of Reference 2 is pending, Dresden Unit 2 Cycle 16 will also utilize a cycle specific 0.029 additive constant uncertainty to support operation with ATRIUM-9B fuel. Therefore, this amendment proposes the footnotes in Section 5.3 be revised to allow Dresden Unit 2 Cycle 16 operation with a reload of ATRIUM-9B fuel and the conservative interim additive constant uncertainty be used for the MCPR Safety Limit calculation.

Revision to the MCPR Safety Limit

This amendment additionally proposes to increase the MCPR Safety Limit for Dresden Unit 2 to 1.09. Dresden Unit 2 Cycle 16 MCPR Safety Limit calculations were performed using an additive constant uncertainty of 0.029, which conservatively bounds the additive constant uncertainty expected from NRC approval of Reference 2. The results of these calculations support a MCPR Safety Limit of 1.09 for Dresden Unit 2 Cycle 16, which was originally requested in the Reference 1 submittal.

ATTACHMENT A
DESCRIPTION AND EVALUATION OF PROPOSED CHANGES

2. DESCRIPTION OF THE PROPOSED CHANGES

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

Dresden Technical Specification Section 5.3 contains three footnotes that limit the use of reloads of ATRIUM-9B fuel. The footnotes read as follows:

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.
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.

The proposed change is to revise these footnotes to allow operation of Dresden Unit 2 Cycle 16, which contains a reload of ATRIUM-9B fuel. The first and third footnotes are proposed to be deleted and the second footnote is proposed to be revised as follows:

1. Operation in all modes with ATRIUM-9B fuel is allowed for Dresden, Unit 3, Cycle 15, and Unit 2, Cycle 16, only.

The reason Dresden Unit 2 Cycle 16 operation is supportable is because a conservative interim additive constant uncertainty (0.029) is used in the MCPR Safety Limit calculation which is the same additive constant uncertainty used for Dresden Unit 3 Cycle 15 and Quad Cities Unit 2 Cycle 15 (References 4, 5, 6 and 7). This conservative additive constant uncertainty will be used for Dresden Unit 2 Cycle 16 operation until References 1 and 2 have been approved. Upon NRC approval of References 1 and 2, the footnote will be removed to permit operation of ATRIUM-9B fuel in future cycles.

Revision to the MCPR Safety Limit

The current Dresden MCPR Safety Limit is 1.08 for both Unit 2 and Unit 3. For Dresden Unit 2 Cycle 16 the MCPR Safety Limit was calculated using an additive constant uncertainty of 0.029 to conservatively bound the expected additive constant uncertainty resulting from NRC approval of Reference 2. Using an additive constant uncertainty of 0.029 the current MCPR Safety Limit (1.08) is not supportable for Unit 2 Cycle 16. A MCPR Safety Limit of 1.09 was originally proposed in Reference 1, which is supportable for Dresden Unit 2 Cycle 16. Therefore, Technical Specification 2.1.B is proposed to be changed to increase the MCPR Safety Limit to 1.09 for Dresden Unit 2.

ATTACHMENT A
DESCRIPTION AND EVALUATION OF PROPOSED CHANGES

3. DESCRIPTION OF THE CURRENT REQUIREMENTS

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

Currently, Dresden Technical Specifications contain footnotes in Section 5.3 which limit operation with a reload of ATRIUM-9B fuel to Dresden Unit 3 Cycle 15. These footnotes also state that ATRIUM-9B fuel, with the exception of lead test assemblies, is only allowed in the Unit 2 core in Operational Modes 3, 4, and 5, and with no more than one control rod withdrawn. The footnotes specifically read as follows:

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.
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.

These footnotes do not support operation of Dresden Unit 2 Cycle 16, which will contain a reload of SPC ATRIUM-9B fuel.

Revision to the MCPR Safety Limit

The current requirements for the Dresden Unit 2 and 3 MCPR Safety Limit are based on SPC methodology utilizing the SPC Reference 3 critical power methodology to calculate the critical power ratio for the ATRIUM-9B fuel and the 9x9-2 fuel. The 1.08 MCPR Safety Limit currently in the Technical Specifications is applicable to Dresden Unit 2 Cycle 15 and Unit 3 Cycle 15.

4. BASES FOR THE CURRENT REQUIREMENTS

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

The basis for the current cycle specific footnotes in the Dresden Technical Specifications is that Dresden Unit 3 Cycle 15 used a cycle specific conservative interim approach to calculate the ATRIUM-9B fuel additive constant uncertainty. These footnotes were added to the Technical Specifications with the intention of ensuring future operation with a reload of ATRIUM-9B was not allowed unless another conservative interim approach was used or a generic method for calculation of the ATRIUM-9B additive constant

ATTACHMENT A
DESCRIPTION AND EVALUATION OF PROPOSED CHANGES

uncertainty (Reference 2) was approved. This conservative interim additive constant uncertainty was used to calculate the MCPR Safety Limit for Dresden Unit 3 Cycle 15.

Because this approach was cycle specific and interim, footnotes were added to Section 5.3 to limit the operation of ATRIUM-9B fuel in reload quantities to Dresden Unit 3 Cycle 15, only. Therefore, ComEd proposes to use the same approach for Dresden Unit 2 Cycle 16.

Revision to the MCPR Safety Limit

The basis for the MCPR Safety Limit is to provide a margin of safety by ensuring that less than 0.1% of the rods are calculated to be in transition boiling if the MCPR Safety Limit is not violated. The current MCPR Safety Limit for Dresden Unit 2 is based on Reference 3. The current MCPR Safety Limit for Dresden Unit 3 is based on References 3 and 4. For Dresden Unit 3 Cycle 15, which is operating with a reload of ATRIUM-9B, the 1.08 MCPR Safety Limit was determined with an interim ATRIUM-9B additive constant uncertainty of 0.029 prior to Dresden Unit 3 Cycle 15 operation. The MCPR Safety Limit of 1.08 for Dresden Unit 2 was consistent with calculations made to support Unit 2 Cycle 15 operation.

5. NEED FOR THE REVISION OF THE REQUIREMENTS

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

SPC decided to expand the critical power dryout test data base used to determine the ATRIUM-9B ANFB critical power correlation additive constant uncertainty to include a wider range of test conditions. In response to this need for additional data points, SPC compiled a larger set of data for the recalculation of the ATRIUM-9B additive constant uncertainty. This revised methodology for treating the uncertainties (Reference 2) is currently under review by the NRC staff.

Because the NRC staff has not completed a review of the Reference 2 topical, a conservative interim additive constant uncertainty is being used to calculate the Dresden Unit 2 Cycle 16 MCPR Safety Limit. The additive constant uncertainty used for Dresden Unit 2 Cycle 16 is 0.029, which is the same as the interim additive constant uncertainty that was used for Dresden Unit 3 Cycle 15 and Quad Cities Unit 2 Cycle 15 operation (References 4, 5, 6 and 7) and which bounds the expected additive constant uncertainty resulting from the NRC approval of Reference 2.

Currently, Dresden Technical Specifications contain footnotes in Section 5.3 that limit operation with a reload of ATRIUM-9B fuel to Dresden Unit 3 Cycle 15. These footnotes also state that ATRIUM-9B fuel, with the exception of lead test assemblies, is

ATTACHMENT A
DESCRIPTION AND EVALUATION OF PROPOSED CHANGES

only allowed in the Unit 2 core in Operational Modes 3, 4, and 5, and with no more than one control rod withdrawn. These footnotes do not allow for the operation of Dresden Unit 2 Cycle 16, which will contain a reload of ATRIUM-9B fuel. Therefore, these

footnotes need to be revised to support Dresden Unit 2 Cycle 16 operation with ATRIUM-9B fuel.

Revision to the MCPR Safety Limit

The Dresden Unit 2 MCPR Safety Limit is proposed to be increased from 1.08 to 1.09. Using an additive constant uncertainty of 0.029 the current MCPR Safety Limit (1.08) is not supportable for Unit 2 Cycle 16. However, an increased MCPR Safety Limit of 1.09 is supported for Dresden Unit 2 Cycle 16 using a conservative additive constant uncertainty of 0.029. Increasing the MCPR Safety Limit to 1.09 supports Dresden Unit 2 Cycle 16 operation and provides additional margin to transition boiling for future MCPR Safety Limit calculations. ComEd understands that, irrespective of this issue, future reload analyses for the MCPR Safety Limit may require ComEd to propose changes to the Technical Specifications MCPR Safety Limit.

6. DESCRIPTION OF THE REVISED REQUIREMENTS

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

The proposed change is to revise the footnotes in Section 5.3 to allow operation of Dresden Unit 2 Cycle 16, with a reload of ATRIUM-9B fuel. The footnotes that state Unit 2 is only allowed to operate in Modes 3, 4, and 5 with ATRIUM-9B fuel (the first and third footnotes in Section 5.3) are proposed to be deleted and the footnote limiting operation with ATRIUM-9B reloads in all modes to Dresden Unit 3 Cycle 15 only (the second footnote) is proposed to be revised to read as follows:

1. Operation in all modes with ATRIUM-9B fuel is allowed for Dresden, Unit 3, Cycle 15, and Unit 2, Cycle 16, only.

Revision to the MCPR Safety Limit

The proposed change is to increase the Dresden Unit 2 MCPR Safety Limit from 1.08 to 1.09. The MCPR Safety Limit is specified in Technical Specification 2.1.B. Therefore Section 2.1.B is proposed to be changed to specify a MCPR Safety Limit of 1.09 for Unit 2 and to retain the MCPR Safety Limit of 1.08 for Unit 3.

ATTACHMENT A
DESCRIPTION AND EVALUATION OF PROPOSED CHANGES

7. BASIS FOR THE REVISED REQUIREMENTS

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

The basis for revising the footnotes in Section 5.3 is that a conservative interim additive constant uncertainty (0.029), in lieu of approval of Reference 2, is used for the Dresden Unit 2 Cycle 16 MCPR Safety Limit calculation.

For Dresden Unit 2 Cycle 16 the MCPR Safety Limit analyses were performed using a 0.029 additive constant uncertainty. The results of the analyses verify that a MCPR Safety Limit of 1.09 is supportable with 0.0781% rods predicted to experience transition boiling (which is less than the 0.1% allowed per the MCPR Safety Limit basis). 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, the footnotes may be revised to allow Dresden Unit 2 Cycle 16 operation.

Revision to the MCPR Safety Limit

The basis for revising the MCPR Safety Limit for Dresden Unit 2 is to provide a MCPR Safety Limit where 99.9% of the rods in the core avoid transition boiling using an additive constant uncertainty of 0.029. An additive constant uncertainty of 0.029 was used for the MCPR Safety Limit calculation for Dresden Unit 2 Cycle 16 to bound the additive constant uncertainty expected to result from the NRC approval of Reference 2. Using a 0.029 additive constant uncertainty, 0.1038% of the rods are expected to experience transition boiling with a 1.08 MCPR Safety Limit, which is greater than the 0.1% allowed per the MCPR Safety Limit basis. Therefore, a MCPR Safety Limit of 1.08 is not supported for Dresden Unit 2 Cycle 16. With a 1.09 MCPR Safety Limit for Dresden Unit 2 Cycle 16 only 0.0781% of the rods are expected to experience transition boiling, which is less than the 0.1% allowed per the MCPR Safety Limit basis. Therefore, a MCPR Safety Limit of 1.09 is supported for Dresden Unit 2 Cycle 16 and it is necessary to increase the current value from 1.08 to 1.09 for Dresden Unit 2.

8. SCHEDULE REQUIREMENTS

The Reference 2 topical was submitted to the NRC for review and approval in April of 1997, and the Reference 1 ComEd Technical Specification amendment was transmitted to the NRC for review and approval in August 1997. This proposed exigent amendment is being submitted as a consequence of the NRC indicating to ComEd that approval of References 1 and 2 may not be forthcoming on a schedule to support the April 12, 1998 startup of Dresden Unit 2 Cycle 16. This condition was unavoidable and not created by

ATTACHMENT A
DESCRIPTION AND EVALUATION OF PROPOSED CHANGES

the failure to make a timely application for a Technical Specification amendment. Due to the time frame required to process various questions and answers between the NRC and SPC, and current test results leading to a recalculation of the Dresden Unit 2 Cycle 16 MCPR Safety Limit, it has recently become apparent that approval of Reference 1 may not occur soon enough to support Dresden Unit 2 Cycle 16 startup. Also, the final calculation from current test results was not available from SPC prior to March 13, 1998, making an exigent amendment unavoidable. Without approval of this amendment, or the Reference 1 amendment, Dresden Unit 2 Cycle 16 will not be able to resume power operation. The Reference 1 submittal assumed an NRC approved additive constant uncertainty of 0.0195. The final additive constant uncertainty resulting from approval of Reference 2 will supersede the value provided in Reference 1; however, the additive constant uncertainty of 0.029 used to support Dresden Unit 2 Cycle 16 and Dresden Unit 3 Cycle 15 is expected to bound the final additive constant uncertainty.

9. IMPACT ON PREVIOUS SUBMITTALS

A ComEd Technical Specification submittal (Reference 1) was made in August 1997 which included requests to remove the cycle specific footnotes in Section 5.3 and increase the MCPR Safety Limit for Dresden from 1.08 to 1.09. Approval of Reference 1 is contingent upon approval of Reference 2. Since the NRC has indicated that approval of these submittals may not occur on a schedule that supports Dresden Unit 2 Cycle 16 startup, implementation of the Dresden Unit 2 MCPR Safety Limit change from 1.08 to 1.09 and the revised footnotes is needed on an expedited schedule. Upon NRC approval of SPC's Reference 2 Topical and the Reference 1 ComEd Technical Specification amendment, the changes in this submittal would be superseded by the changes in Reference 1. Upon approval of the Reference 2 submittal, SPC will incorporate the approved additive constant uncertainty into future MCPR Safety Limit calculations. The final additive constant uncertainty resulting from approval of Reference 2 will supersede the value provided in Reference 1; however, the additive constant uncertainty of 0.029 used to support Dresden Unit 2 Cycle 16 and Dresden Unit 3 Cycle 15 is expected to bound the final additive constant uncertainty.

ATTACHMENT B

**SUMMARY of PROPOSED CHANGES to the
DRESDEN UNIT 2 TECHNICAL SPECIFICATIONS**

ATTACHMENT B
SUMMARY OF PROPOSED CHANGES TO THE DRESDEN UNIT 2
TECHNICAL SPECIFICATIONS

Topic	Affected Pages	Description of Change
Revision to the MCPR Safety Limit	2-1	The Dresden Unit 2 MCPR Safety Limit is increased from 1.08 to 1.09. The Dresden Unit 3 MCPR Safety Limit will remain at 1.08.
Revision to Footnotes Limiting the use of ATRIUM-9B Reloads	5-5	The footnotes that limit the use and design bases of ATRIUM-9B reloads in Unit 3 are revised to support operation of Unit 2 Cycle 16 also.