Commonwealth Edison Company
1400 Opus Place
Downers Grove, IL 60515-5701

January 31, 1997

ComEd

United States Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: NRC Document Control Desk

Subject: Byron Nuclear Power Station, Units 1 and 2
Facility Operating Licenses NPF-37 and NPF-66
NRC Docket Number: 50-454 and 50-455

"Specific Activity"

Reference: C. Shiraki letter to D. Farrar dated July 26, 1995, transmitting Amendment 167 for Zion Unit 1

Pursuant to Title 10, Code of Federal Regulations, Part 50, Section 90 (10 CFR 50.90), Commonwealth Edison Company (ComEd) proposes to amend Appendix A, Technical Specifications, for Facility Operating Licenses NPF-37 and NPF-66, for Byron Nuclear Power Station, Units 1 & 2, respectively. ComEd proposes to revise Technical Specification Section 3.4.8 "Specific Activity", Table 3.4-1 and Technical Specification Bases 3.4.8. for Byron Unit 1. These changes will reduce the allowable Unit 1 Reactor Coolant System Dose Equivalent iodine-131 from 0.35 microCuries/gram to 0.20 microCuries/gram for the remainder of Cycle 8. This amendment is necessary in order to provide additional margin to the maximum site allowable primary to secondary leakage limit.

The justification presented in the attachments to lower the dose equivalent iodine below 0.35 microCuries/gram is consistent with that used for the Zion Unit 1 Technical Specification Amendment 167 as transmitted via the reference letter.

This package effects Byron Unit 1 only, but is being submitted for Byron 1 and Byron 2, because of technical specification pages are common to both units.

Enclosed is:

Attachment A: Description & Safety Analysis for Proposed Changes to Technical Specifications

Attachment B: Proposed Changes to Technical Specifications Pages

Attachment C: Evaluation of Significant Hazards Consideration for Proposed Changes

Attachment D: Environmental Assessment for Proposed Changes

A001

ComEd requests that this proposed amendment be reviewed and approved by March 31, 1997 to facilitate the scheduling of the steam generator replacement outage.

The proposed changes in this license amendment have been reviewed and approved by both On-Site and Off-Site review in accordance with ComEd procedures.

ComEd is notify the State of Illinois of our application for this license amendment request by transmitting a copy of this letter and its attachment to the designated State Official.

I affirm that the control of this transmittal is true and correct to the best of my knowledge, information and belief.

If you have any questions concerning this correspondence, please contact Denise Saccomando, Senior PWR Licensing Administrator at (630) 663-7283.

Sincerely,

OFFICIAL SEAL
MARY JO YACK
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 11/29/97

John B. Hosmer

John B. Hosmer
Engineering Vice President

Signed before me on this 31st day of January, 1997 by

Mary Jo Yack
Notary Public

Attachments

cc: S. Burgess, Senior Resident Inspector - Byron
C. Phillips, Senior Resident Inspector - Braidwood
G. Dick, Byron/Braidwood Project Manager - NRR
A. B. Beach, Regional Administrator - RIII
Office of Nuclear Safety - IDNS

ATTACHMENT A

DESCRIPTION AND SAFETY ANALYSIS OF
PROPOSED CHANGES TO APPENDIX A
TECHNICAL SPECIFICATIONS OF
FACILITY OPERATING LICENSE
NPF-37 AND NPF-66

A. DESCRIPTION OF THE PROPOSED CHANGE

Commonwealth Edison (ComEd) proposes to revise Technical Specification (TS) 3.4.8, "Specific Activity," and the associated Bases. This revision will lower the Unit 1 Reactor Coolant System (RCS) Dose Equivalent (DE) Iodine 131 (I-131) limit from 0.35 microCuries per gram (μCi/gm) to 0.20 μCi/gm through Cycle 8 and correct a typographical error. This reduction will also be reflected in TS Figure 3.4-1. During the end-of-cycle 8 refueling outage, the original Westinghouse Model D-4 steam generators will be replaced with Babcock & Wilcox International (BWI) steam generators. Consequently, the reduced RCS DE I-131 limit will only be required until the original steam generators are replaced. The Unit 2 RCS DE I-131 limits are unaffected by this change.

These changes are discussed in detail in Section E of this attachment. The affected TS pages showing the actual changes are included in Attachment B of this request.

B. DESCRIPTION OF THE CURRENT REQUIREMENT

TS 3.4.8 requires that the specific activity of the reactor coolant be limited to less than or equal to 0.35 μCi/gm DE I-131 for Unit 1. When in Modes 1, 2, or 3 (greater than or equal to 500°F), action is required to place the unit in at least Hot Standby with T_{avg} less than 500°F within 6 hours if the DE I-131 limit has been exceeded for more than 48 hours or if the limits of TS Figure 3.4-1 have been exceeded. When in Modes 1, 2, 3, 4, or 5, sampling and analysis in accordance with Table 4.4-4 is required when the DE I-131 limit of 0.35 μCi/gm for Unit 1 is exceeded until the specific activity of the RCS is restored to within its limits.

C. BASES FOR THE CURRENT REQUIREMENT

The limitations on the specific activity of the RCS ensure that the resulting 2-hour off-site dose will not exceed the appropriate fraction of the 10 CFR Part 100 dose guideline values. The evaluation was based on an acceptance criteria of 30 rem thyroid dose at the Exclusion Area Boundary per NUREG 0800, the Standard Review Plan (SRP), Section 15.1.5, Appendix A for an accident initiated iodine spike. The bounding accident is a Main Steam Line Break (MSLB) in conjunction with an assumed steady-state reactor-to-secondary steam generator leak rate of 1 gallon per minute (gpm) and the RCS specific activity at the TS limit. These conditions were applied to both a pre-accident and accident initiated iodine spike. For the pre-accident iodine transient, DE I-131 was assumed to be at the TS transient limit of 60 μCi/gm. For the accident initiated spike, the activity was assumed to be at the TS steady-state limit of 1 μCi/gm with a release rate spike factor of 500 times the steady-state release rate. The secondary coolant activity was assumed to be 0.1 μCi/gm with steam generator leakage at the TS limit of 150 gallons per day (gpd) in each steam generator. The accident initiated spike was determined to be the most limiting condition.

In support of a license amendment request for application of 1.0 volt Interim Plugging Criteria for steam generator tube support plate indications, the maximum site allowable primary-to-secondary leakage was determined, using the NRC SRP methodology, to be 12.8 gpm, assuming an RCS iodine concentration of 1.0 μCi/gm. The amendment request was approved by the NRC in an October 24, 1994, Safety Evaluation Report (SER). The maximum site allowable leakage limit was raised to 36.5 gpm by reducing the TS DE I-131 from 1.0 μCi/gm to 0.35 μCi/gm in support of the 3.0 volt Interim Plugging Criteria license amendment request which was approved by the NRC in a November 9, 1995, Safety Evaluation Report.

D. NEED FOR REVISION OF THE REQUIREMENT

ComEd is requesting a reduction in the Unit 1 RCS DE I-131 limit from 0.35 μCi/gm to 0.20 μCi/gm. This change is required in order to provide additional margin to the maximum site allowable primary-to-secondary leakage limit. The total potential leakage includes primary-to-secondary leakage from circumferential indications which may exist in the faulted steam generator, leakage from indications remaining in service in the faulted steam generator due to application of the approved Interim Plugging Criteria and F* criteria, and 150 gpd leakage from each of the three unfaulted steam generators.

E. DESCRIPTION OF THE REVISED REQUIREMENT

The footnotes associated with the TS Limiting Condition for Operation (LCO) 3.4.8.a; Modes 1, 2, and 3 Action a; Modes 1, 2, 3, 4, and 5 Action; and Table 4.4-4 will be revised to lower the RCS DE I-131 limit for Unit 1 through Cycle 8 to 0.20 µCi/gm. The revised footnote will read:

> "For Unit 1 through Cycle 8, reactor coolant DOSE EQUIVALENT I-131 will be limited to 0.20 microCuries per gram."

Also, a typographical error in LCO 3.4.8.a is corrected to read "...1 microCurie per gram..." The word "microCurie" is incorrectly spelled in the current TS.

TS Figure 3.4-1, "DOSE EQUIVALENT I-131 REACTOR COOLANT SPECIFIC ACTIVITY LIMIT VERSUS PERCENT OF RATED THERMAL POWER WITH THE REACTOR COOLANT SPECIFIC ACTIVITY >1 µCi/GRAM DOSE EQUIVALENT I-131*" will be revised to reflect the new Unit 1 RCS DE I-131 limit. Specifically, the curve labeled "UNIT 1 LIMIT" will be modified to reflect the 0.20 µCi/gm limit. The footnote to TS Figure 3.4-1 will be revised to read: "For Unit 1 through Cycle 8, Reactor Coolant Specific Activity > 0.20 µCi/Gram DOSE EQUIVALENT I-131."

An insert will be added to Bases 3/4.4.8, "Specific Activity," to identify the bases for the reduced I-131 limit. The insert will read as follows:

> "For Unit 1 through Cycle 8, the limitations on the specific activity of the reactor coolant ensure that the resulting 2-hour off-site doses will not exceed an appropriately small fraction of the 10 CFR Part 100 dose guideline values following a Main Steam Line Break accident in conjunction with an assumed steady-state primary-to-secondary steam generator leakage rate of 150 gpd from each unfaulted steam generator and maximum site allowable primary-to-secondary leakage from the faulted steam generator."

F. BASES FOR THE REVISED REQUIREMENT

The justification presented herein to lower the RCS DE I-131 below 0.35 µCi/gm, is consistent with that used for the Zion Unit 1 Technical Specification Amendment No. 167. This methodology was approved by the Staff in a SER dated July 26, 1995. Specifically, the Zion SER stated the following:

> "Therefore, based on the plant-specific information supplied by the licensee, the staff considers it unlikely for the short time period of this amendment that an accident initiated iodine spike for Zion Unit 1 would be greater than the NRC SRP assumed value. The change to the RCS dose equivalent iodine concentration below 0.35 microCuries per gram, as proposed by the licensee, is acceptable for the interim period for which the TS change is requested."

The effect of reducing the RCS DE I-131 limit on the amount of activity released to the environment remains unchanged when the maximum site allowable primary-to-secondary leak rate is proportionately increased. With a DE I-131 limit of 1.0 µCi/gm, the site allowable leak limit, calculated in accordance with the NRC SRP methodology, was determined to be 12.8 gpm. The corresponding calculated maximum activity released during a MSLB is 15.8 Ci. By reducing the DE I-131 limit to 0.20 µCi/gm and increasing the site allowable leakage limit to 64.0 gpm (12.8 gpm divided by 0.2), the maximum activity released is not changed. Therefore, the offsite dose assessment and conclusions previously reached remain valid and continue to meet the requirements of 10CFR100.

However, the iodine release rate calculation methodology requires further evaluation when the RCS DE I-131 limit is reduced to values below 0.35 µCi/gm. In August of 1995, the Staff issued NRC Generic Letter 95-05 "Voltage Based Repair Criteria For Westinghouse Steam Generator Tubes Affected By Outside Diameter Stress Corrosion Cracking." In Section 2.b.4, pertaining to the calculation of off-site and Control Room doses, the Generic Letter states, "Reduction of reactor coolant iodine activity is an acceptable means for accepting higher projected leakage rates and still meeting the applicable limits of Title 10 of the Code of Federal Regulations Part 100 and GDC 19 utilizing licensing basis assumptions." The Generic Letter also states, "Licensees who wish to take credit for reduced reactor coolant system iodine activities (below 0.35 microCuries per gram dose equivalent I-131) in the radiological dose calculation, should provide a justification supporting the request that evaluates the release rate data described in reference 6." Reference 6 of Generic Letter 95-05 is a report by J.P. Adams and C.L. Atwood, "The Iodine Spike Release Rate During a Steam Generator Tube Rupture," Nuclear Technology, Vol. 94, p. 361 (1991).

Based on the data in the Adams and Atwood report, the NRC SRP release rate spike factor of 500 may seem non-conservative, since the Adams and Atwood factor was typically greater than 500 when initial concentrations were less than 0.3 µCi/gm. To examine the conservatism in the current release rate calculations, ComEd has summarized and compared four methods postulating the effects of a MSLB in conjunction with primary-to-secondary leakage. The four methods ComEd evaluated are:

Method 1: NRC SRP Methodology

Method 2: Calculation of site specific release rates using actual Byron Unit 1 and Byron Unit 2 operational data both with and without fuel failures using the iodine release rate methodology described in Section II.C of the Adams and Atwood report.

Method 3: Calculation of an absolute iodine release rate normalized to plant power derived from an industry database at 95% confidence level as described in Section III of the Adams and Atwood report.

Method 4: Methodology described in Draft EPRI Report TR-103680, Revision 1, November 1995, "Empirical Study of Iodine Spiking in PWR Power Plants".

Method 1 Evaluation (NRC SRP Methodology)

In accordance with the NRC SRP, the current maximum site allowable primary-to-secondary leakage dose calculation for Byron assumes two cases:

1) an initial RCS DE I-131 activity of 60 μCi/gm due to a preaccident iodine spike caused by a reactor transient; and,
2) an initial RCS DE I-131 activity of 1.0 μCi/gm with a concurrent iodine spike that increases the DE I-131 release rate from the fuel rods to the RCS by a factor of 500. The spike factor is defined as the ratio of the post-trip release rate to the steady-state release rate.

Case 2 was determined to be the limiting case and resulted in a maximum site allowable primary-to-secondary leakage of 12.8 gpm with DE I-131 limited to 1.0 μCi/gm. The 12.8 gpm maximum site allowable primary-to-secondary leakage limit includes 150 gpd from each of the three unfaulted steam generators. In determining that Case 2 is limiting, the allowable leak rate was calculated based on Low Population Zone (LPZ) dose, and Exclusion Area Boundary (EAB) using the applicable 10CFR100 thyroid dose limit.

By reducing the RCS DE I-131 by the same proportion as increasing the allowable leak rate, there is no net change in the total amount of Curies released during the transient. The revised RCS DE I-131 limit of 0.2 μCi/gm replaces the original steady-state limit of 1.0μCi/gm for Case 2 and 12.0 μCi/gm replaces the original transient limit of 60 μCi/gm for Case 1.

An evaluation of Control Room dose attributed to a MSLB concurrent with steam generator primary-to-secondary leakage at the maximum site allowable leakage limit was performed in support of a license amendment request for application of 1.0 volt Interim Plugging Criteria. This evaluation concluded that Control Room dose due to the MSLB scenario is bounded by the existing loss of coolant accident analysis. Therefore, the maximum site allowable primary-to-secondary leakage limit is based on offsite dose at the Exclusion Area boundary due to an accident initiated spike. This conclusion was previously submitted to the Staff in a September 22, 1994, transmittal in support of the 1.0 volt Interim Plugging Criteria license amendment request.

A reduction in the RCS DE I-131 limit allows an increase in the maximum site allowable primary-to-secondary leakage without an increase in thyroid dose at the site boundary. Based upon an iodine limit of 1.0 μCi/gm, the maximum site allowable leakage was calculated to be 12.8 gpm. The Unit 1 RCS DE I-131 was reduced from 1.0 μCi/gm to 0.35 μCi/gm in support of the 3.0 volt Interim Plugging Criteria License Amendment Request which was approved by the NRC in a November 9, 1995 SER. This reduction of the DE I-131 limit increased the maximum site allowable leakage from 12.8 gpm to 36.5 gpm. By reducing the iodine limit to 0.20 μCi/gm, the maximum site allowable leakage can be increased to 64.0 gpm (12.8 gpm divided by 0.2) without an increase in thyroid dose at the site boundary.

Method 2 Evaluation (Adams and Atwood Methodology)

The Adams and Atwood (A/A) report concluded that the NRC SRP methodology which specifies a release rate spike factor of 500 for iodine activity from the fuel rod to the RCS is conservative.

In order to justify that a release rate spike factor of 500 is conservative, actual operating data from the previous reactor trips of Byron Unit 1 and Unit 2 were reviewed and analyzed using the methodology presented Section II.C of the A/A report. The same five data screening criteria described in the A/A report were applied to the Byron data to ensure consistency and validity when comparing the Byron results to the data in the A/A report. The specific data screening criteria applied to each Byron reactor trip are as follows:

1) The plant must have been at steady-state conditions a minimum of five days prior to the reactor trip.
2) Knowledge of the steady-state iodine concentration.
3) At least one post-trip chemistry sample was obtained 2 to 6 hours following the reactor trip.
4) No occurrence of a post-trip RCS perturbation

5) Availability of all requisite transient information (e.g., purification flow, trip date and time, post-trip sample date and time). Historical purification flow data was not available, therefore, purification flow was conservatively assumed to be the minimum letdown flowrate (75 gpm).

Of the total 28 reactor trip events at Byron Units 1 and 2, twelve (12) met the five screening criteria described above. The data collected and the calculated release rate for each transient satisfying the screening criteria is summarized in the table below. The complete data is listed in Table A.1 and Table A.2. The post-trip maximum release rate in the table is based on the bounded maximum iodine concentration (three times the measured post-trip concentration and an assumed time after trip of 2 hours).

Event	Pre-Trip Iodine Concentration (µCi/gm)	Post-Trip Concentration (µCi/gm)	Steady-State Release Rate (Ci/hr)	Post-Trip Maximum Release Rate (Ci/hr)	Iodine Spike Factor
1	2.00E-2	1.40E-1	3.52E-1	5.24E+1	149.0
2	2.90E-2	2.90E-1	5.10E-1	1.10E+2	215.5
3	3.00E-3	6.90E-3	5.28E-2	2.35E+0	44.6
4	1.60E-2	3.30E-1	2.81E-1	1.27+2	451.3
5	6.70E-3	8.00E-2	1.18E-1	3.04E+1	258.6
6	4.51E-4	3.48E-4	7.93E-3	8.50E-2	10.7
7	4.00E-2	2.60E-1	7.04E-1	9.69E+1	137.8
8	3.20E-2	1.90E-1	5.63E-1	7.05E+1	125.4
9	1.20E-2	3.30E-1	2.11E-1	1.27E+2	603.9
10	4.10E-3	6.80E-2	7.21E-2	2.61E+1	361.7
11	7.25E-4	4.70E-4	1.28E-2	1.02E-1	8.0
12	4.70E-4	4.20E-4	8.27E-3	1.11E-1	13.4

Events 6, 11, and 12 occurred during cycles with no failed fuel. All remaining events occurred during cycles with failed fuel. Byron Unit 1 Cycle 8 is currently operating with no failed fuel and a DE I-131 of approximately 6E-4 µCi/gm. Events 6, 11 and 12 have steady-state iodine values that are relatively close to current operating conditions. It is therefore reasonable to conclude that the calculated spike factors from those events would reflect an actual event under current cycle conditions. In all three of these instances the calculated spike factor is a small fraction of the assumed spike factor of 500 in the NRC SRP methodology.

Based on the data in the A/A report, the NRC SRP release rate spike factor of 500 may seem non-conservative since the A/A factor was typically greater than 500 when initial concentrations were less than 0.3 μCi/gm. The primary reason for these high factors (up to 12,000) is not because the absolute post-trip release rate is high (factor numerator), but rather because the steady-state release rate (factor denominator) is low. Because the release rate spike factor is primarily influenced by the steady state release rate the effect on off-site dose is negligible. The Byron specific data only resulted in one event with a calculated release rate spike factor greater than 500. This was Event 9 with a spike factor of 603.9. Event 9 occurred with failed fuel and a very low steady-state release rate which increases the spike factor.

In order to compare the Byron specific data to the NRC SRP methodology, the release rate for a steady-state RCS DE I-131 activity of 1.0 μCi/gm was calculated. Using the Byron specific data, the pre-trip steady-state release rate is 17.6 Ci/hr. Using a release rate spike factor of 500 for the accident initiated spike, the NRC SRP post-trip maximum release rate would be 8797 Ci/hr. The highest post-trip iodine release rate from the Byron trip data, during Event 4 and Event 9, was 127 Ci/hr, which is significantly lower than that determined by the NRC SRP Method. This demonstrates that although a data point showed an iodine spike factor greater than 500 (Event 9), the resulting post-trip RCS DE I-131 fuel rod iodine release rate is less than the fuel rod iodine release rate from the NRC SRP methodology for the current thyroid dose calculation.

Method 3 (Statistical Adams and Atwood Methodology)

The A/A report applied a statistical analysis to the industry data to estimate the probability distribution of the normalized release rate associated with the iodine spike. The results from this statistical analysis are cumulative probability distributions which are a measure of the probability that an accident would result in an iodine spike with magnitude less than a given value. This methodology was used to determine if the Byron reactor trip data was consistent with the industry data. The analysis ratios the post-trip fuel rod iodine release rate by the pre-trip steady-state reactor power (megawatts-electric, MWe). This methodology was used to normalize the fuel rod iodine release rates in order to compare the fuel rod iodine release rates among the various plant sizes while eliminating the artificiality of assuming a single steady-state iodine concentration. By utilizing this normalization method and the statistical techniques referenced in the A/A report, a normalized fuel rod iodine release rate for the 168 events evaluated in the A/A report was determined to be less than 1.09 Ci/hr-MWe after applying a 95% confidence limit on the 90th percentile.

Applying this fuel rod iodine release rate to Byron Unit 1 at full power (1175 MWe), the predicted post-accident release rate would be 1281 Ci/hr. This means that with 95% confidence, it is expected that 90% of all the accidents will result in an iodine spike with a normalized release rate less than 1281 Ci/hr. As discussed in Method 2, the actual Byron post-trip iodine release rates ranged from 0.085 to 127.0 Ci/hr, which are much smaller than the A/A normalized release rate of 1281 Ci/hr and the site specific NRC SRP release rate of 8797 Ci/hr. Therefore, Byron can be confident that the current NRC SRP dose assessment methodology is more conservative than using both the A/A methodology with site specific and normalized industry data.

Method 4 (EPRI Report Methodology)

This method presents the results from Draft EPRI Report TR-103680, Rev. 1, November 1995, "Empirical Study of Iodine Spiking In PWR Power Plants." The objective of the EPRI study was to quantify the iodine spiking in postulated Main Steam Line Break/Steam Generator Tube Rupture (MSLB/SGTR) sequences. Based upon measured data from fifteen normal operational reactor transients and two SGTR events, the EPRI empirical model shows good agreement between the measured and the predicted RCS DE I-131 concentration when using iodine release rate spike factors of 45 to 150. This also supports the conclusion in Method 2 that the NRC SRP spike factor of 500 is conservative.

The EPRI empirical model was used to predict the fuel rod iodine release rate in postulated MSLB/SGTR sequences. Predictions based on the empirical model agree well with observed spiking based on industry data. Predictions for two MSLB/SGTR sequences yield two-hour average iodine concentrations of 3.1 μCi/gm or less in the reactor coolant. This value is less than the value based on NRC SRP methodology described in the EPRI report (38 μCi/gm), indicating that the SRP methodology significantly over predicts the iodine spike.

Conclusion

The current Byron Unit 1 Cycle 8 RCS DE I-131 activity level has been relatively stable at approximately 6E-4 μCi/gm over the last 7 months. Byron Unit 1 has operated the previous two cycles with high fuel integrity. If a MSLB were to occur during Cycle 8 with the present Unit 1 RCS DE I-131 activity, the specific activity in the RCS would not be expected to increase significantly more than the post-trip values indicated in the Unit 1 reactor trips presented in Method 2. Therefore, it is reasonable to expect that for the remainder of Cycle 8, during the time period for which the requested amendment would be applicable, the accident initiated iodine spike factor for Unit 1 would be below the NRC SRP assumed value of 500.

Based on evaluations by the four methods above, Byron can conclude that the current methodology (method 1) used to predict iodine spiking is conservative and will ensure that 10CFR100 limits, GDC 19 criteria, and the requirements of NRC Generic Letter 95-05 are satisfied.

G. IMPACT OF THE PROPOSED CHANGE

The requested change in the Unit 1, RCS DE I-131 limit from the current 0.35 µCi/gm to 0.20 µCi/gm permits an extension to the Unit 1 Cycle 8 operating period to 540 days without predicted primary-to-secondary accident leakage exceeding the maximum site allowable steam generator leakage limit. A cycle length of 540 days would permit Unit 1 operation until the scheduled steam generator replacement outage. Using the current RCS DE I-131 value of 0.35 µCi/gm, the site maximum allowable leakage limit is 36.5 gpm. Using the proposed 0.20 µCi/gm RCS DE I-131 limit, the new maximum site allowable leakage limit is 64.0 gpm.

Generic Letter 95-05 permits lowering the dose equivalent iodine activity as a means for accepting higher projected leakage rates provided justification for RCS DE I-131 activity below 0.35 µCi/gm is given. Should the RCS DE I-131 activity increase to the proposed 0.20 µCi/gm limit, the expected iodine spike should be a small fraction of the spike predicted by the NRC SRP. Higher iodine release factors may result with RCS DE I-131 activities less than 0.20 µCi/gm, but due to the initial RCS DE I-131 activity being lower, the resultant dose at the site Exclusion Area Boundary would not exceed a small fraction of the 10CFR100 limits.

This amendment request will not result in any changes to existing systems or equipment, nor will it result in the installation of any new systems or equipment. Therefore, this proposed change will not result in any significant negative impact on any system or operating mode.

At the completion of Byron Unit 1 Cycle 8, ComEd will be replacing the original Westinghouse D-4 steam generators with Babcock & Wilcox International (BWI) steam generators. With the replacement of the steam generators, the DE I-131 limit will be returned to 1.0 µCi/gm. This will be addressed in a separate licensing submittal.

H. SCHEDULE REQUIREMENTS

This change is permits an extension of the Unit 1 Cycle 8 operating period to 540 days. In order to facilitate outage scheduling, ComEd requests that this proposed amendment be reviewed and approved by March 31, 1997

TABLE A.1
BYRON STATION REACTOR TRIP DATA

Event	Unit	Cycle	Trip Date	Trip Time	Power at Trip	Pre Trip Iodine (µCi/gm) (Note 1)	Post Trip Iodine (µCi/gm) (Note 1)	Post Trip Iodine (date/time) (Note 1)	Failed Fuel (Y/N)
1	1	1	1/29/86	0:06	98%	2.00E-02	1.40E-01	1/29/86 3:45	Y
2	1	1	9/30/86	9:11	93%	2.90E-02	2.90E-01	9/30/86 11:35	Y
3	1	2	7/29/87	22:11	98%	3.00E-03	6.90E-03	7/30/87 1:10	Y
4	1	2	7/16/88	4:31	98%	1.60E-02	3.30E-01	7/16/88 7:30	Y
5	1	3	1/31/89	9:56	99%	6.70E-03	8.00E-02	1/31/89 12:00	Y
6	1	8	9/11/96	0:17	96.5%	4.51E-04	3.48E-04	9/11/96 2:30	N
7	2	1	7/14/87	18:15	98%	4.00E-02	2.60E-01	7/15/87 0:15	Y
8	2	1	7/25/87	12:16	98%	3.20E-02	1.90E-01	7/25/87 14:15	Y
9	2	1	2/12/88	18:04	94%	1.20E-02	3.30E-01	2/12/88 20:50	Y
10	2	1	12/15/88	10:02	40%	4.10E-03	6.80E-02	12/15/88 12:45	Y
11	2	5	9/24/94	10:12	100%	7.25E-04	4.70E-04	9/24/94 12:20	N
12	2	6	5/23/96	8:04	98%	4.70E-04	4.20E-04	5/23/96 10:20	N

Note 1: Data taken from 1/2BCS 11.2.1.2-7, "Power Change Radioactive Iodine and Particulate Effluents - Shift Engineer Request", performed on day of trip.

TABLE A.2
BYRON STATION REACTOR TRIP IODINE RELEASE RATE AND SPIKE FACTORS

Sample ID:	Maximum Post-Trip Iodine (3x Sample)	R_0 Pre-Trip Steady State Release Rate (Ci/hr)	R (Ci/hr)	Spike Factor [R/R_0]	R / MWe
Unit-1					
1	4.20E-01	3.52E-01	5.24E+01	1.49E+02	4.55E-02
2	8.70E-01	5.10E-01	1.10E+02	2.15E+02	1.01E-01
3	2.07E-02	5.28E-02	2.35E+00	4.46E+01	2.04E-03
4	9.90E-01	2.81E-01	1.27E+02	4.51E+02	1.10E-01
5	2.40E-01	1.18E-01	3.04E+01	2.58E+02	2.62E-02
6	1.04E-03	7.93E-03	8.50E-02	1.07E+01	7.50E-05
Unit-2					
7	7.80E-01	7.04E-01	9.69E+01	1.38E+02	8.40E-02
8	5.70E-01	5.63E-01	7.05E+01	1.25E+02	6.12E-02
9	9.90E-01	2.11E-01	1.27E+02	6.03E+02	1.15E-01
10	2.04E-01	7.21E-02	2.61E+01	3.61E+02	5.54E-02
11	1.41E-03	1.28E-02	1.02E-01	7.98E+00	8.66E-05
12	1.26E-03	8.27E-03	1.11E-01	1.34E+01	9.64E-05