ATTACHMENT B

PROPOSED CHANGES TO APPENDIX A
TECHNICAL SPECIFICATIONS FOR
FACILITY OPERATING LICENSES
NPF-37, NPF-66, NPF-72 AND NPF-77

Revised Pages

3/4 6-11
3/4 6-12
B 3/4 6-2 *
B 3/4 6-3

* No changes. Included for continuity.

ZNLD/2605/4

CONTAINMENT SYSTEMS

CONTAINMENT PURGE VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.1.7 Each containment purge supply and exhaust isolation valves shall be OPERABLE and:

a. Each 48-inch containment shutdown purge supply and exhaust isolation valve shall be closed and power removed, and

b. The 8-inch containment purge supply and exhaust isolation valve(s) ~~may be open for up to 1000 hours during a calendar year provided no more than one line is open at one time.~~

Insert 1 →

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With a 48-inch containment purge supply and/or exhaust isolation valve open and/or powered, close and remove power to isolate the penetration(s) within 4 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With the 8-inch containment purge supply and/or exhaust isolation valve(s) open for ~~more than 1000 hours during a calendar year~~, close the open 8-inch valve(s) or isolate the penetration(s) within 4 hours, otherwise be in at least HOT STANDBY within the next 6 hours, and in COLD SHUTDOWN within the following 30 hours.

c. With a containment purge supply and/or exhaust isolation valve(s) having a measured leakage rate in excess of the limits of Specifications 4.6.1.7.3 and/or 4.6.1.7.4, restore the inoperable valve(s) to OPERABLE status within 24 hours, otherwise be in at least HOT STANDBY within the next 6 hours, and in COLD SHUTDOWN within the following 30 hours.

Insert 1 → reasons other than given in Specification 3.6.1.7b above

SURVEILLANCE REQUIREMENTS

4.6.1.7.1 Each 48-inch containment purge supply and exhaust isolation valve(s) shall be verified closed and power removed at least once per 31 days.

4.6.1.7.2 ~~The cumulative time that all 8-inch containment purge supply and/or exhaust isolation valves have been open during a calendar year shall be determined at least once per 7 days.~~

Insert 2

4.6.1.7.3 At least once per 6 months on a STAGGERED TEST BASIS, the inboard and outboard valves with resilient material seals in each closed 48-inch containment purge supply and exhaust penetration shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than 0.05 L_a when pressurized to at least P_a, 44.4 psig.

4.6.1.7.4 At least once per 3 months, each 8-inch containment purge supply and exhaust isolation valve with resilient material seals shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than 0.01 L_a when pressurized to at least P_a, 44.4 psig.

3/4.6.1.5 AIR TEMPERATURE

The limitations on containment average air temperature ensure that the overall containment average air temperature does not exceed the initial temperature condition assumed in the accident analysis for a steam line break accident. Measurements shall be made at all of the listed running fan locations, whether by fixed or portable instruments, to determine the average air temperature.

3/4.6.1.6 CONTAINMENT VESSEL STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment will be maintained comparable to the original design standards for the life of the facility. Structural integrity is required to ensure that the containment will withstand the maximum pressure of 44.4 psig in the event of a cold leg double-ended break accident. The measurement of containment tendon lift-off force, the tensile tests of the tendon wires or strands, the visual examination of tendons, anchorages and exposed interior and exterior surfaces of the containment, and the Type A leakage test are sufficient to demonstrate this capability.

The Surveillance Requirements for demonstrating the containment's structural integrity are in compliance with the recommendations of proposed Rev. 3 to Regulatory Guide 1.35, "Inservice Surveillance of Ungrouted Tendons in Prestressed Concrete Containment Structures," April 1979 and proposed Regulatory Guide 1.35.1, "Determining Prestressing Forces for Inspection of Prestressed Concrete Containments," April 1979.

The required Special Reports from any engineering evaluation of containment abnormalties shall include a description of the tendon condition, the condition of the concrete (especially at tendon anchorages), the inspection procedure, the tolerances on cracking, the results of the engineering evaluation and the corrective actions taken.

3/4.6.1.7 CONTAINMENT PURGE VENTILATION SYSTEM

The 48-inch containment purge supply and exhaust isolation valves are required to be sealed closed (power removed) during plant operations since these valves have not been demonstrated capable of closing during a LOCA or steam line break accident. Maintaining these valves sealed closed during plant operation ensures that excessive quantities of radioactive material will not be released via the Containment Purge System. To provide assurance that the 48-inch containment valves cannot be inadvertently opened, the valves are sealed closed in accordance with Standard Review Plan 6.2.4 which includes mechanical devices to seal or lock the valve closed, or prevents power from being supplied to the valve operator.

The use of the containment purge lines is restricted to the 8-inch purge supply and exhaust isolation valves since, unlike the 48-inch valves, the 8-inch valves are capable of closing during a LOCA or steam line break accident. Therefore, the SITE BOUNDARY dose guideline values of 10 CFR Part 100 would not

BASES

CONTAINMENT PURGE VENTILATION SYSTEM (Continued)

Insert 3 → be exceeded in the event of an accident during containment ~~purging operation. Operation with one line open will be limited to 1000 hours during a calender year.~~

Leakage integrity tests with a maximum allowable leakage rate for containment purge supply and exhaust supply valves will provide early indication of resilient material seal degradation and will allow opportunity for repair before gross leakage failures could develop. The 0.60 L_a leakage limit of Specification 3.6.1.2.b. shall not be exceeded when the leakage rates determined by the leakage integrity tests of these valves are added to the previously determined total for all valves and penetrations subject to Type B and C tests.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

3/4.6.2.1 CONTAINMENT SPRAY SYSTEM

The OPERABILITY of the Containment Spray System ensures that containment depressurization and cooling capability will be available in the event of a LOCA or steam line break. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the safety analyses.

The Containment Spray System and Containment Cooling System are redundant to each other in providing post-accident cooling of the containment atmosphere. However, the Containment Spray System also provides a mechanism for removing iodine from the containment atmosphere and therefore the time requirements for restoring an inoperable Spray System to OPERABLE status have been maintained consistent with that assigned other inoperable ESF equipment.

3/4.6.2.2 SPRAY ADDITIVE SYSTEM

The OPERABILITY of the Spray Additive System ensures that sufficient NaOH is added to the containment spray in the event of a LOCA. The limits on NaOH volume and concentration ensure a pH value of between 8.5 and 11.0 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. The contained solution volume limit includes an allowance for solution not usable because of tank discharge line location or other physical characteristics. These assumptions are consistent with the iodine removal efficiency assumed in the safety analyses. A spray additive tank level of between 78.6% and 90.3% ensures a volume of greater than or equal to 4000 gallons but less than or equal to 4540 gallons.

Insert 1

...shall be closed except that these valves may be open for purge system operation for reasons such as containment pressure control, reduction of airborne activity, respirable air quality considerations for personnel entry, surveillance tests that require the valve(s) to be open, and for other safety-related purposes.

Insert 2

Each 8-inch containment purge supply and exhaust isolation valve shall be verified to be positioned in accordance with Specification 3.6.1.7b at least once per 31 days.

Insert 3

...PURGING or VENTING operation. Only safety-related reasons such as containment pressure control or the reduction of airborne activity to facilitate personnel access for surveillance or maintenance activities should be used to justify opening these isolation valves. Other safety-related reasons would include maintaining limits set out in the Technical Specifications, Updated Final Safety Analysis Report, Code of Federal Regulations, Regulatory Guides, Safety Evaluation Reports or other licensing basis documentation.

CONTAINMENT PURGE VENTILATION SYSTEM

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APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With a 48-inch containment purge supply and/or exhaust isolation valve open and/or powered, close and remove power to isolate the penetration(s) within 4 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With the 8-inch containment purge supply and/or exhaust isolation valve(s) open for reasons other than given in 3.6.1.7b above ~~more than 1000 hours during a calendar year~~, close the open 8-inch valve( ) or isolate the penetration(s) within 4 hours, otherwise be in at least HOT STANDBY within the next 6 hours, and in COLD SHUTDOWN within the following 30 hours.

c. With a containment purge supply and/or exhaust isolation valve(s) having a measured leakage rate in excess of the limits of Specifications 4.6.1.7.3 and/or 4.6.1.7.4, restore the inoperable valve(s) to OPERABLE status within 24 hours, otherwise be in at least HOT STANDBY within the next 6 hours, and in COLD SHUTDOWN within the following 30 hours.

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INSERT 2 →

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Included for continuity only
no changes to this page

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The use of the containment purge lines is restricted to the 8-inch purge supply and exhaust isolation valves since, unlike the 48-inch valves, the 8-inch valves are capable of closing during a LOCA or steam line break accident. Therefore, the SITE BOUNDARY dose guideline values of 10 CFR Part 100 would not

CONTAINMENT PURGE VENTILATION SYSTEM (Continued)

Insert 3

be exceeded in the event of an accident during containment ~~purging/operation. Operation with one line open will be limited to 1000 hours during a calendar year.~~

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Insert 1

...shall be closed except that these valves may be open for purge system operation for reasons such as containment pressure control, reduction of airborne activity, respirable air quality considerations for personnel entry, surveillance tests that require the valve(s) to be open, and for other safety-related purposes.

Insert 2

Each 8-inch containment purge supply and exhaust isolation valve shall be verified to be positioned in accordance with Specification 3.6.1.7b at least once per 31 days.

Insert 3

...PURGING or VENTING operation. Only safety-related reasons such as containment pressure control or the reduction of airborne activity to facilitate personnel access for surveillance or maintenance activities should be used to justify opening these isolation valves. Other safety-related reasons would include maintaining limits set out in the Technical Specifications, Updated Final Safety Analysis Report, Code of Federal Regulations, Regulatory Guides, Safety Evaluation Reports or other licensing basis documentation.

ATTACHMENT C

SAFETY EVALUATION

BYRON/BRAIDWOOD UNITS 1 AND 2
8-INCH CONTAINMENT PURGE SYSTEM OPERATION
SAFETY EVALUATION

1.0 BACKGROUND

The current technical specification requirement governing operation of the 8-inch containment purge supply and exhaust isolation valves allows only one line (supply or exhaust) to be opened at a time and specifies a cumulative time limit that the valves can be opened. The proposed revision to Technical Specification Section 3/4.6.1.7 would allow simultaneous opening of the purge supply and exhaust isolation valves for containment pressure control, ALARA, and respirable air quality considerations for personnel entry or surveillance tests that require the valve(s) to be open. Both the purge supply and exhaust isolation valves close on a containment isolation signal as before.

2.0 LICENSING BASIS

Title 10 of the Code of Federal Regulations, Section 50.59 (10 CFR 50.59) allows the holder of a license authorizing operation of a nuclear power facility the capacity to initiate certain changes, tests, and experiments not described in the Final Safety Analysis Report (FSAR). Prior Nuclear Regulatory Commission (NRC) approval is not required to implement the modification provided that the proposed change, test, or experiment does not involve an unreviewed safety question or result in a change to the plant technical specifications incorporated in the license. While the proposed change to the 8-inch Purge System involves a change to the Byron and Braidwood technical specifications and requires a licensing amendment request, this evaluation will be performed using the method outlined under 10 CFR 50.59 to provide the bases for the determination that the proposed change does not involve an unreviewed safety question. In addition, an evaluation will demonstrate that the proposed change does not represent a significant hazards consideration, as required by 10 CFR 50.91 (a) (1) and will address the three test factors required by 10 CFR 50.92 (c).

3.0 EVALUATIONS

The Westinghouse evaluations are limited to the following areas: radiological consequences, LOCA and LOCA-related accidents, non-LOCA transients, and M/E releases and containment analyses. The following impacts were considered:

- Impact on dose calculations due to an additional release path.
- Impact on initial containment conditions for postulated accidents.
- Impact on postulated transient results with valves open.

The results of these evaluations are discussed in the following sections.

3.1 Radiological Consequences Evaluation

The offsite doses that would result if the 8-inch containment purge system was in operation at the initiation of a large break LOCA were calculated in accordance with Branch Technical Position CSB 6-4 guidelines. The large break LOCA is considered to bound other postulated accidents.

The radiological consequences of the releases through the 8-inch containment purge system at the beginning of a hypothetical LOCA are summarized below.

Station	Site Boundary	Low Population Zone
Byron	Thyroid Dose: 9.1 rem Gamma-body: 0.017 rem	0.27 rem 0.0005 rem
Braidwood	Thyroid Dose: 12.3 rem Gamma-body: 0.023 rem	1.13 rem 0.0021 rem

These doses are based on the following assumptions:

1. Primary coolant iodine concentration is at the maximum Tech Spec value of 60 uCi/g Dose Equivalent I-131 (pre-existing iodine spike).

2. Purge valves are isolated at 7.62 seconds into the accident.

3. Only 29% of the containment free volume is used as the mixing volume.

4. The flow from the containment to the atmosphere during the time the miniflow purge system is open is assumed to go through the supply and exhaust lines and is assumed to increase as a function of containment pressure during the Double-Ended Cold Leg (DECL) LOCA.

5. The coolant activity released inside containment is based on the DECL mass releases.

The doses, when added to the LOCA dose contributions from containment leakage and from leakage of recirculated ECCS solution, do not add a significant amount to the total. The largest increases are in the site boundary thyroid dose. The Byron total LOCA dose increases from 115 rem to 124 rem, and the Braidwood total LOCA dose increases from 155 rem to 167 rem. The dose increases represent a small fraction of the previously calculated dose totals. The increased doses remain within the limits of 10 CFR 100.

3.2 LOCA and LOCA Related Evaluations

3.2.1 Large Break LOCA - (FSAR Chapter 15.6.5)

The current large break LOCA licensing basis analysis for Byron/Braidwood was performed using the models described in Reference (3) and are presented in Reference (2). The Byron/Braidwood Stations Updated FSAR Chapter 6.2 section 6.2.1.5 contains an evaluation for the effect on large break LOCA calculated peak cladding temperature (PCT) with containment purge. This evaluation already accounted for both valves being open prior to the LOCA and assumed a valve closure time of 5.0 seconds. The impact on containment pressure resulting from the loss of air or steam is less than 0.05 psi. This evaluation was based on results from an older LOCA analysis performed for Byron/Braidwood using the February 1978 version of the Westinghouse ECCS evaluation model. While the current LOCA analysis for Byron/Braidwood is now based on the newer 1981 + BASH model, the evaluation appearing in the Updated FSAR is still valid and bounds any expected effect of containment purge on the calculated peak cladding temperature. This conclusion is based on Westinghouse internal sensitivity studies which have demonstrated the conservatism in the older models. Given that the assumption for purge valve closure in 5.0 seconds does not change, the large break LOCA analyses calculated consequences increase peak cladding temperature by a negligible amount (1°F). Thus, the analysis consequences and assumptions are not changed by the proposed change to the Byron and Braidwood Technical Specifications. The proposed change will result in a 1°F PCT margin penalty for the Byron and Braidwood Stations.

3.2.2 Small Break LOCA - (FSAR Chapter 15.6.5)

The current small break LOCA licensing basis analysis for the Byron/Braidwood Stations (Reference 2) was performed with the model described in References (4) and (5). Small break LOCA analyses as performed by Westinghouse, do not model the containment or take credit for containment pressure above atmospheric pressure. Thus, the calculated small break PCT is not affected by containment purge or changes to the containment purge Technical Specification. Thus, implementation of the new Technical Specification for 3/4.6.1.7 allowing both the purge supply and exhaust valves to be open simultaneously will not result in any hypothesized small break exceeding the 10 CFR 50.46 criteria.

3.2.3 Blowdown Reactor Vessel and Loop Forces - (UFSAR Chapter 3)

The licensing basis LOCA hydraulic forces analysis results found in Reference (1) calculate the peak loads occurring within the first 0.5 seconds of the transient. During this period the break flow is critically limited and is therefore unaffected by changes in containment pressure. Thus the occurrence of the peak loads is well before any containment back pressure effects could change the calculated break flow and therefore the consequences associated with LOCA hydraulic forces. Therefore, the proposed change to the

Technical Specifications covering containment purge at the Byron/Braidwood Stations, will not affect the consequences or conclusions of the LOCA hydraulic forces analysis found in the Byron/Braidwood Stations Updated FSAR.

3.2.4 Post-LOCA Long-Term Core Cooling (FSAR Chapter 15.6.5)

Reference (6) presents the Westinghouse licensing commitment to keep the reactor core subcritical with all control rods out (ARO) following a hypothetical large break LOCA and crediting only the boron provided by the ECCS. Reference (6) is cited in the Byron/Braidwood Updated FSAR Chapter 15.6.5 and is part of the licensing basis for the Byron/Braidwood stations. Reference (7) has provided clarification to the utilities on the Westinghouse licensing position. Since the Post-LOCA subcriticality is based on large break requirements and further assumes that the contents of the RWST have been injected and reside in the RCS/Containment sump Post-LOCA, this licensing requirement is not sensitive to assumptions for containment pressure during a hypothetical LOCA. Thus, the proposed change to the Technical Specification covering containment purge at Byron/Braidwood Stations has no effect on this requirement.

3.2.5 Hot Leg Switchover to Prevent Potential Boron Precipitation (FSAR Chapter 6.3)

The calculations performed to determine the time (Post-LOCA) at which the boron concentration in the reactor vessel would exceed the solubility limit do not explicitly model the reactor containment and are independent of assumptions for containment pressure. Thus, the proposed change to the Technical Specification covering containment purge at Byron/Braidwood Stations has no effect on this licensing requirement.

3.2.6 Loss of Heat Sink Emergency Response Guidance

A Loss of Heat Sink (LOHS) event is not a design basis accident for PWRs, but following the accident at Three Mile Island the NRC required the utilities to improve operator training and guidance. As part of these required improvements, Westinghouse performed analyses of inadequate core cooling scenarios in order to provide improved emergency operating procedures. An inadequate core cooling condition could be developed by a loss of all secondary feedwater following a reactor trip. Analyses of this scenario are presented in Reference (8). A LOHS event behaves similarly to a small break LOCA in that high RCS pressure exists during the core uncovery period and persists through the recovery period. Similar to the small break LOCA analysis assumptions, credit is not taken in the analyses for containment pressure higher than atmospheric pressure and therefore, changes in containment purge will not affect the conclusions drawn from Reference (8). Therefore, the LOHS recovery technique of "Bleed and Feed" initiated upon symptoms of Steam Generator Dry-out will remain effective in preventing inadequate core cooling.

3.3 Non-LOCA Evaluation

The non-LOCA safety analyses presented in Chapter 15 of the UFSAR are not adversely affected by changing the method of containment purge. This activity does not affect normal plant operating parameters, accident mitigation capabilities, the assumptions used in the non-LOCA transients, or create conditions more limiting than those enveloped by the current non-LOCA analyses. Therefore, the conclusions presented in Chapter 15 of the UFSAR remain valid and the proposed evaluation for continued operation does not constitute an unreviewed safety question.

3.4 Mass and Energy Release / Containment Analyses

Relaxation of Tech Spec Section 3/4.6.1.7 to allow simultaneous opening of the 8-inch containment purge supply and exhaust isolation valves does not adversely affect the short term and the long term LOCA and MSLB mass and energy releases and the containment analyses. This change does not affect the normal plant operating parameters, system actuations, accident mitigating capabilities or assumptions important to the containment analyses, or create conditions more limiting than those assumed in these analyses. Therefore, the conclusions presented in the SAR remain valid with respect to the containment analyses.

4.0 CONCLUSIONS

The proposed change to the Technical Specifications and the impact to the licensing basis analyses of allowing simultaneous opening of the 8-inch containment purge supply and exhaust isolation valves have been evaluated by Westinghouse. The analyses and evaluations have determined that the proposed operation of the 8-inch containment purge system will have no adverse impact upon the licensing basis analyses. The impact of the proposed change on the large-break LOCA doses has been calculated and the radiological consequences associated with the proposed change do not significantly change the dose totals. The dose totals remain within the limits of 10CFR100. It is not necessary to specifically limit the time these valves may be opened during normal operation since the effluent through these valves is monitored for radioactivity and the amount of time the valves may be opened is a function of the actual releases. If the radioactivity being released is within the allowable 10 CFR Part 50 Appendix I guidelines for continuous release, the valves do not require a specific limitation on the duration they are opened. In addition, if the radioactivity being released exceeded allowable limits, the valves would receive a signal to close. Also note that the reasons for opening these valves is specifically limited to the conditions stated in the specifications.

The recommended Technical Specification changes and a No Significant Hazards evaluation are presented as attachments to this safety evaluation.

The proposed change to allow simultaneous opening of the 8-inch containment purge system supply and exhaust isolation valves does not represent an unreviewed safety question per the definition and requirements of 10CFR50.59 based on the following justification.

1. Simultaneous opening of the 8-inch containment purge supply and exhaust isolation valves does not increase the probability of an accident previously evaluated in the FSAR. The isolation valves do not initiate any accident discussed in the FSAR. Component and system performance will not be adversely affected since equipment and system design criteria continue to be met. The containment isolation signals which automatically close the 8-inch isolation valves are not affected by the proposed change.

2. The consequences of an accident previously evaluated in the FSAR are not increased due to simultaneous opening of the 8-inch containment purge supply and exhaust isolation valves. A conservative analysis demonstrated that the radiological releases through the purge system would be small. The largest additional dose calculated with conservative assumptions was approximately 9 rem thyroid dose at the Byron Station site boundary and 12 rem thyroid dose at the Braidwood Station site boundary. This additional dose was added to the LOCA doses previously reported in Chapter 15 of the UFSAR. The new LOCA doses remain well within the limits specified in 10CFR100.

3. Simultaneous opening of the 8-inch containment purge supply and exhaust isolation valves does not create the possibility of an accident which is different than any already evaluated in the FSAR. The proposed change is in the operation, not the design of the equipment. The containment isolation signal received by the 8-inch containment purge system is unchanged and the closure time for the isolation valves are also unaffected by the proposed change. No new failure modes have been defined for any system or component important to safety nor has any new limiting single failure been identified. Therefore, the possibility of an accident different than any already evaluated is not created.

4. The proposed change to the 8-inch containment purge system operation will not increase the probability of a malfunction of equipment important to safety previously evaluated in the FSAR. The containment isolation capability is unaffected by this change. Component and system performance will not be adversely affected since equipment and system design criteria continue to be met. There is no impact on any other safety system to perform its intended function in mitigating any accidents.

5. Simultaneous opening of the 8-inch containment purge supply and exhaust isolation valves will not increase the consequences of a malfunction of equipment important to safety previously evaluated in the FSAR. The change in the operation of the valves will not degrade any system performance such that its malfunction will adversely affect another transient. Therefore, no more severe dose consequences will result due to this modification.

6. Simultaneous opening of the 8-inch containment purge supply and exhaust isolation valves will not create the possibility of a malfunction of equipment important to safety different than any already evaluated in the FSAR. The change in the operation of the valves does not affect the original design and performance criteria for the system and has not introduced a new limiting single failure for these systems.

7. The margin of safety as defined in the basis of the Technical Specifications is not significantly reduced by the change in the 8-inch containment purge system operation. All acceptance criteria with respect to fuel, RCS pressure boundary, and containment integrity continue to be met.

Based on the information presented above, it can be concluded that the proposed change to the 8-inch containment purge system as described in this evaluation does not involve an unreviewed safety question as defined in 10 CFR5 0.59.

5.0 REFERENCES

1) BYRON/BRAIDWOOD STATIONS UPDATED FSAR

2) Westinghouse Letter 89CB*-G-0083, J. W. Swogger (W) to Dr. W. Naughton (CECo), "VANTAGE 5 RELOAD TRANSITION SAFETY REPORT FOR THE BYRON/BRAIDWOOD STATIONS UNIT 1 AND 2", JULY 1989, Letter Dated July 18, 1989.

3) WCAP-10266 REV.2 with Addenda (PROPRIETARY), "THE 1981 VERSION OF THE WESTINGHOUSE ECCS EVALUATION MODEL USING THE BASH CODE", AUGUST, 1986.

4) WCAP-10079-P-A (PROPRIETARY) and WCAP-10080-A (NON-PROPRIETARY) "NOTRUMP: A NODAL TRANSIENT SMALL BREAK AND GENERAL NETWORK CODE", AUGUST 1985.

5) WCAP-10054-P-A (PROPRIETARY), "WESTINGHOUSE SMALL BREAK LOCA ECCS EVALUATION MODEL USING THE NOTRUMP CODE", AUGUST 1985.

6) WCAP-8339 (NON-PROPRIETARY), "WESTINGHOUSE EMERGENCY CORE COOLING SYSTEM EVALUATION MODEL - SUMMARY", JUNE 1974.

7) WESTINGHOUSE TECHNICAL BULLETIN NSID-TB-86-08, "Post-LOCA LONG-TERM COOLING: BORON REQUIREMENTS", OCTOBER 31, 1986

8) WCAP-9914 (PROPRIETARY), "PORV SENSITIVITY STUDY FOR LOFW-LOCA ANALYSES", JULY 1981.

ATTACHMENT D

EVALUATION OF SIGNIFICANT HAZARDS CONSIDERATIONS

On behalf of the Commonwealth Edison Company (CECo), the Westinghouse Electric Corporation has evaluated this proposed amendment and determined that it involves no significant hazards considerations. According to Title 10, Code of Federal Regulations, Part 50, Section 92, Paragraph (c) [10 CFR 50.92(c)], a proposed amendment to an operating license involves no significant hazards considerations if operation of the facility in accordance with the proposed amendment would not:

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

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

3. Involve a significant reduction in a margin of safety.

CECo has reviewed the Westinghouse Electric Corporation evaluation and concurs with the methodology and conclusions. The basis for this determination of no significant hazards considerations is presented below.

SIGNIFICANT HAZARDS EVALUATION FOR BYRON STATION 8-INCH CONTAINMENT PURGE SYSTEM TECHNICAL SPECIFICATION CHANGE

Introduction:

This analysis is provided in accordance with 10CFR50.92 to demonstrate that the proposed license amendment to revise Technical Specifications for the Containment Purge Ventilation System represents no significant hazards. The regulations state that if operation of the facility in accordance with the proposed amendment would not: 1) involve a significant increase in the probability or consequences of an accident previously evaluated, or 2) create the possibility of a new or different kind of accident from any accident previously evaluated, or 3) involve a significant reduction in a margin of safety, then a determination of no significant hazards can be made.

Description of Amendment Request:

The purpose of this amendment request is to revise Technical Specification 3/4.6.1.7 to permit the supply and exhaust valves of the 8-inch containment purge system (miniflow purge system) to be opened simultaneously under certain conditions. The existing Technical Specification states that the 8-inch containment purge supply and exhaust isolation valve(s) may be open for up to 1000 hours during a calendar year provided no more than one line is open at one time. When only the supply or the exhaust line of the miniflow purge system is open, the containment pressure is affected because of mass addition or deletion without a corresponding input of outside air or release of containment atmosphere.

The change in Tech Specs will allow the miniflow purge system to be used without adversely affecting containment pressure. Simultaneous opening of both the supply and exhaust lines will equalize mass flow into and out of containment. This will improve system efficiency and reduce the number of hours the miniflow purge system must be operated to create respirable air conditions inside containment.

Basis for No Significant Hazards Determination:

The proposed change does not affect the containment isolation function of the 8-inch containment purge system. The containment isolation signals which automatically close the 8-inch valves are not being altered by this change. The bounding condition evaluated was miniflow purge supply and exhaust lines both open at the beginning of a postulated loss of coolant accident (LOCA). Under these conditions, the containment atmosphere would have a path through the 8-inch containment purge system until the containment isolation valves are closed. The containment isolation valves are closed 7 seconds into the accident (2 seconds for signal generation and 5 seconds for valve operation).

The proposed changes have been evaluated in accordance with the Significant Hazards criteria of 10CFR50.92. The results of the evaluation demonstrate that the changes do not involve any significant hazards as described below.

1) A significant increase in the probability or consequences of an accident previously evaluated.

The proposed change was evaluated with respect to the consequences in the first few seconds of a LOCA, i.e. from the beginning of the accident until the miniflow purge system is isolated. A conservative analysis demonstrated that the radiological releases through the miniflow purge system would be very small.

The largest additional dose calculated with conservative assumptions was less than 4 rem thyroid dose at the Byron Station site boundary and less than 5 rem thyroid dose at the Braidwood Station site boundary. This additional dose was added to the LOCA doses previously calculated and reported in Chapter 15 of the UFSAR. The new dose total remains well within the limits of 10CFR100. It should be noted that there is significant margin between the thyroid doses and the 300 rem guideline specified in 10 CFR 100.

Simultaneous opening of the 8-inch containment purge supply and exhaust isolation valves does not increase the probability of an accident previously evaluated. Component and system performance will not be adversely affected since equipment and system design criteria continue to be met. The isolation valves do not initiate any accident discussed in the FSAR. The containment isolation signals which automatically close the 8-inch isolation valves are not affected by the proposed change.

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

The possibility for an accident or malfunction of a different type than any evaluated previously in the safety analysis report is not created. The proposed change is in the operation of the system and not in the design of the equipment. The containment isolation signal received by the 8-inch containment purge system is unchanged and the closure time assumed for the isolation valves are also unaffected by this change.

The change in operation of the 8-inch containment purge system does not create new or different accidents. The initiation of postulated accidents does not depend on the 8-inch containment purge system. The proposed operation does not create a different accident from any previously evaluated because the purge system will continue to be isolated by the containment isolation signal.

3) Involve a significant reduction in a margin of safety.

The margin of safety as defined in the basis of the Technical Specifications is not significantly reduced by the change in the miniflow purge system operation. All acceptance criteria with respect to fuel, RCS pressure boundary, and containment integrity continue to be met.

ATTACHMENT D

ENVIRONMENTAL ASSESSMENT STATEMENT

Commonwealth Edison Company (CECo) has evaluated the proposed amendment against the criteria for and 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 a categorical exclusion as provided for under 10 CFR 51.22(c)(9). This determination is based on the following:

1. These changes are being proposed as an amendment to a license for a reactor pursuant to 10 CFR 50 which changes a requirement with respect to the operation of the mini-purge system. The proposed amendment would allow the concurrent opening of the mini-purge supply and exhaust lines for the purposes of containment pressure control, reduction of airborne activity, respirable air quality considerations for personnel entry, surveillance tests that require the valve(s) to be open, and other safety-related purposes. There is a slight increase in the potential offsite dose as a result of this change due to an additional release pathway being open from containment at the onset of an accident. This slight increase in potential offsite dose has been evaluated by the Westinghouse Electric Corporation and determined not to be significant and well below the 10 CFR 100 limits,

2. the amendment involves no significant hazards consideration,

3. there is no significant increase in the amounts of any effluents that may be released offsite, and

4. there is no significant increase in individual or cumulative occupational radiation exposure.

ATTACHMENT E

ENVIRONMENTAL ASSESSMENT STATEMENT

Commonwealth Edison Company (CECo) has evaluated the proposed amendment against the criteria for and 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 a categorical exclusion as provided for under 10 CFR 51.22(c)(9). This determination is based on the following:

1. These changes are being proposed as an amendment to a license for a reactor pursuant to 10 CFR 50 which changes a requirement with respect to the operation of the mini-purge system. The proposed amendment would allow the concurrent opening of the mini-purge supply and exhaust lines for the purposes of containment pressure control, reduction of airborne activity, respirable air quality considerations for personnel entry, surveillance tests that require the valve(s) to be open, and other safety-related purposes. There is a slight increase in the potential offsite dose as a result of this change due to an additional release pathway being open from containment at the onset of an accident. This slight increase in potential offsite dose has been evaluated by the Westinghouse Electric Corporation and determined not to be significant and well below the 10 CFR 100 limits,

2. the amendment involves no significant hazards consideration,

3. there is no significant increase in the amounts of any effluents that may be released offsite, and

4. there is no significant increase in individual or cumulative occupational radiation exposure.

ATTACHMENT F

Simplified Drawing - Containment Purge System

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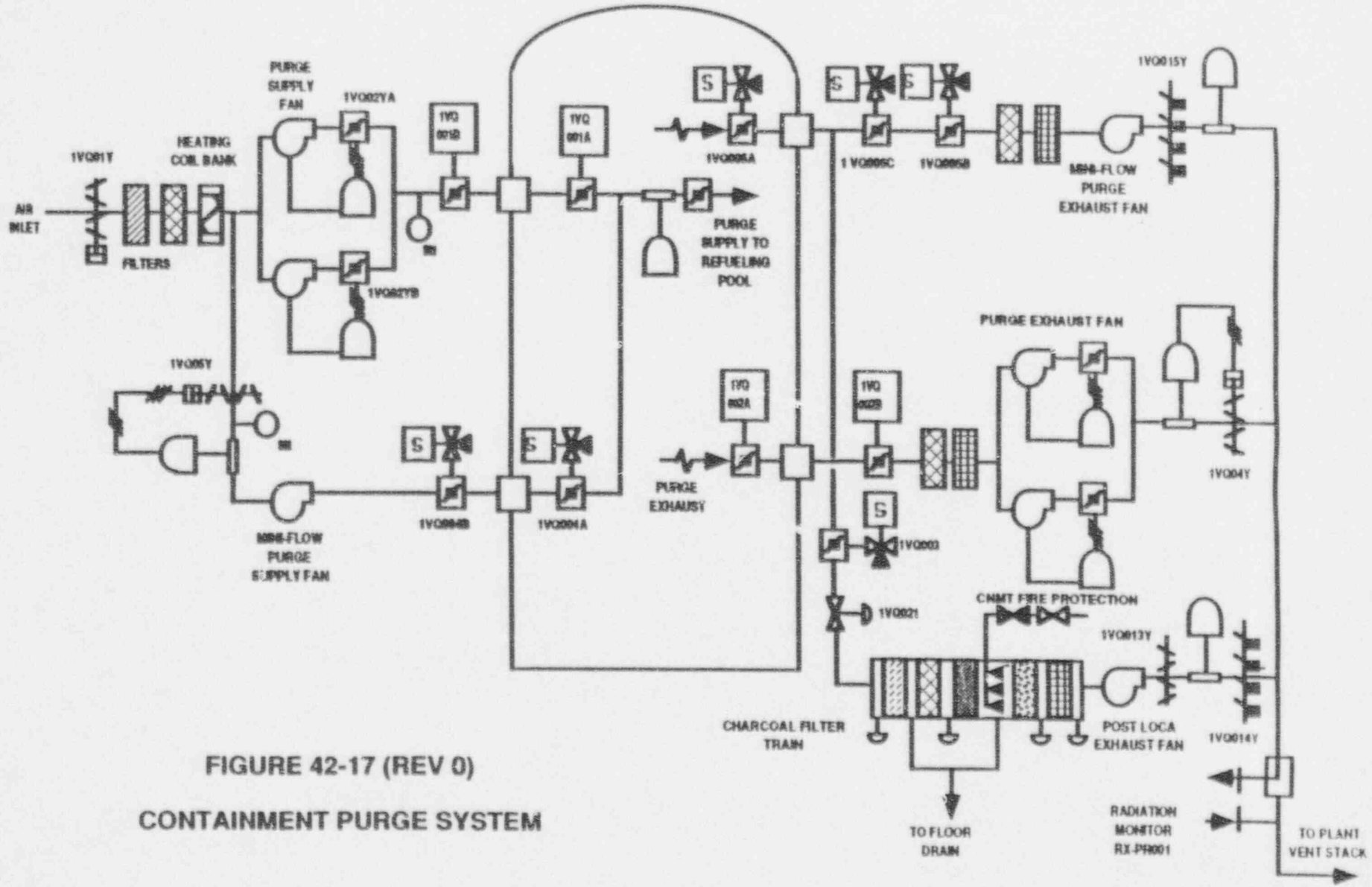
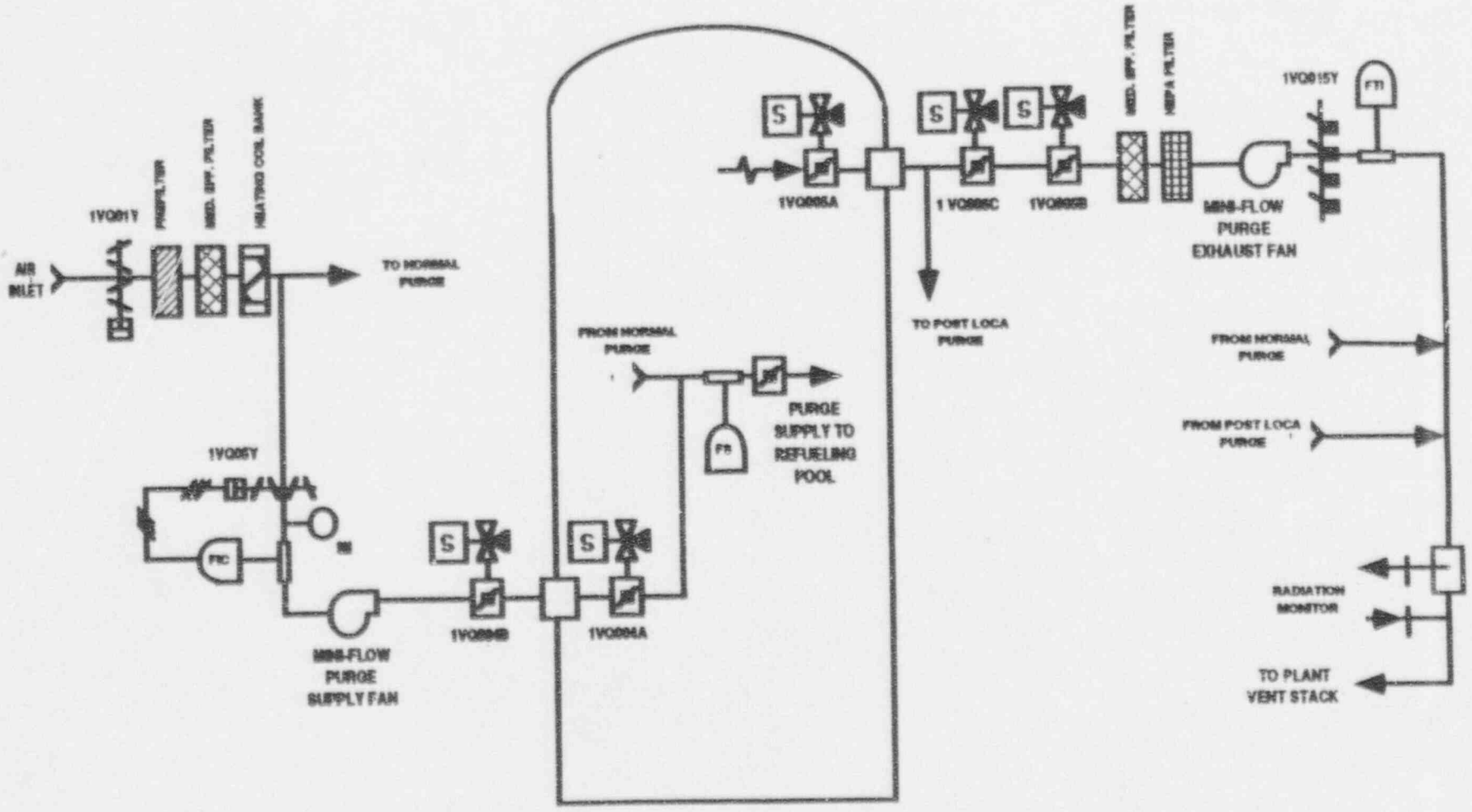


FIGURE 42-17 (REV 0)

CONTAINMENT PURGE SYSTEM

ATTACHMENT G

Simplified Drawing - Mini Purge Subsystem



MINI-FLOW PURGE SUBSYSTEM

FIGURE 42-18 (REV 0)