ENTERGY

Entergy Operations, Inc.
P.O. Box 756
Port Gibson, MS 39150
Tel 601 437 2800

November 20, 1995

C. R. Hutchinson
Vice President
Operations
Grand Gulf Nuclear Station

U.S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, D.C. 20555

ATTENTION: Document Control Desk

SUBJECT: Grand Gulf Nuclear Station and River Bend Station
Docket No. 50-416 and 50-458
License No. NPF-29 and NPF-47
Drywell Leak Rate Testing Requirements
Proposed Amendment to the Operating License

REFERENCE:
1. GNRO-93/00122, Grand Gulf Nuclear Station, Drywell Bypass and Drywell Airlock Testing, Proposed Amendment to the Operating License (PCOL-93/13), dated October 22, 1993.
2. GNRI-95/00047, Issuance of Amendment No. 119 to Facility Operating License No. NPF-29 - Grand Gulf Nuclear Station, Unit 1 (TAC No. M88078), dated February 16, 1995.
3. RBG-41525, River Bend Station, License Amendment Request (LAR) 95-06, Change to Technical Specification 3/4.6.2.2, "Drywell Bypass Leakage", dated May 30, 1995.

GNRO-95/00128
RBG-42193

Gentlemen:

Entergy Operations, Inc. is submitting by this letter a revision to a proposed amendment to the Grand Gulf Nuclear Station (GGNS) Operating License and a proposed amendment to the River Bend Station (RBS) Operating License. The original requests were transmitted to you via GNRO-93/00122 and RBG-41525. This letter revises the original submittals by updating the requests to reflect implementation of the Improved Technical Specifications on March 20, 1995 at GGNS, the changes to the Technical Specifications approved by the NRC Staff in Amendment 119 for GGNS, and implementation of the Improved Technical Specifications on October 1, 1995 for RBS. This revision also provides additional information concerning this submittal and incorporates generic improvements to the proposed Technical Specification requirements as discussed with members of the NRC Staff during a meeting on September 12, 1995 and in telephone discussions following the meeting.

To reduce NRC Staff resource demands, GGNS and RBS, along with the other BWR 6's (Clinton Power Station and Perry Nuclear Power Plant), met with the NRC Staff on September 12, 1995 and discussed the justification for the proposed changes and the generic aspects of the proposed changes to the Technical Specifications. The other BWR 6's plan to request Technical Specification changes consistent with these proposed changes. We request NRC Staff complete its review and approval in time to support RBS's January 1996 refueling outage.

This proposed amendment has been submitted as part of the cost beneficial licensing action (CBLA) program established within NRR where increased priority is granted to licensee requests for changes requiring NRC Staff review that involve high cost without a commensurate safety benefit. Entergy developed the proposed changes to decrease the operational burden placed on outage resources. A savings of $7.5M has been estimated for the remaining life of the plant for GGNS and $8.5M for RBS for a total savings of $16M. In addition, radiation exposure to personnel will be reduced as a result of these changes.

Attachment 2 provides a detailed description of the proposed changes, justification, and the No Significant Hazards Considerations. Attachment 3 is a copy of the marked-up TS pages for GGNS and Attachment 4 is a copy of the marked-up TS pages for RBS.

Based on the guidelines in 10 CFR 50.92, Entergy Operations has concluded that this proposed amendment involves no significant hazards considerations. Attachment 2 details the basis for this determination.

In accordance with the provisions of 10 CFR 50.4, the signed original of the requested amendment is enclosed.

Yours truly,

C. R. Hutchinson

CRH/BSF

attachments:
1. Affirmation per 10 CFR 50.30 (2 pages)
2. Drywell Leak Rate Testing, Discussion and Justification (23 pages)
3. Mark-up of Affected Technical Specifications and Bases for GGNS (23 pages)
4. Mark-up of Affected Technical Specifications and Bases for RBS (22 Pages)
5. NRC Questions Concerning the Proposed Changes (7 pages)

cc:
Mr. R. H. Bernhard (w/a)
Mr. H. W. Keiser (w/a)
Mr. R. B. McGehee (w/a)
Mr. N. S. Reynolds (w/a)
Mr. H. L. Thomas (w/o)

cc: (continued)

NRC Resident Inspector (w/a)
P.O. Box 1051
St. Francisville, LA 70775

Mr. P. W. O'Connor, Project Manager (w/2)
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Mail Stop 13H3
Washington, D.C. 20555

Department of Environmental Quality (w/a)
Radiation Protection Division
P.O. Box 82135
Baton Rouge, LA 70884-2135
ATTN: Administrator

Dr. Eddie F. Thompson (w/a)
State Health Officer
State Board of Health
P.O. Box 1700
Jackson, Mississippi 39205

U.S. Nuclear Regulatory Commission (w/a)
Region IV
Suite 400
611 Ryan Plaza Drive
Arlington, TX 76011

Mr. David L. Wigginton (w/2)
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Mail Stop 13H3
Rockville, MD 20853

BEFORE THE

UNITED STATES NUCLEAR REGULATORY COMMISSION

LICENSE NO. NPF-29

DOCKET NO. 50-416

IN THE MATTER OF

MISSISSIPPI POWER & LIGHT COMPANY
and
SYSTEM ENERGY RESOURCES, INC.
and
SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION
and
ENTERGY OPERATIONS, INC.

AFFIRMATION

I, C. R. Hutchinson, being duly sworn, state that I am Vice President, Operations Grand Gulf Nuclear Station, of Entergy Operations, Inc.; that on behalf of Entergy Operations, Inc., System Energy Resources, Inc., and South Mississippi Electric Power Association I am authorized by Entergy Operations, Inc. to sign and file with the Nuclear Regulatory Commission, this application; that I signed this application as the Vice President, Operations Grand Gulf Nuclear Station, of Entergy Operations, Inc.; and that the statements made and the matters set forth therein are true and correct to the best of my knowledge, information and belief.

C. R. Hutchinson
C. R. Hutchinson

STATE OF MISSISSIPPI
COUNTY OF CLAIBORNE

SUBSCRIBED AND SWORN TO before me, a Notary Public, in and for the County and State above named, this 20th day of November, 1995.

(SEAL)

Richard R. Moore III
Notary Public

MISSISSIPPI STATEWIDE NOTARY PUBLIC
MY COMMISSION EXPIRES JUNE 5, 1998
BONDED THRU STEGALL NOTARY SERVICE
My commission expires:

BEFORE THE

UNITED STATES NUCLEAR REGULATORY COMMISSION

LICENSE NO. NPF-47

DOCKET NO. 50-458

IN THE MATTER OF

GULF STATES UTILITIES COMPANY

CAJUN ELECTRIC POWER COOPERATIVE AND

ENTERGY OPERATIONS, INC.

AFFIRMATION

I, John R. McGaha, state that I am Vice President-Operations of Entergy Operations, Inc., at River Bend Station; that on behalf of Entergy Operations, Inc., I am authorized by Entergy Operations, Inc. to sign and file with the Nuclear Regulatory Commission, this License Amendment Request, that I signed this request as Vice President-Operations at River Bend Station of Entergy Operations, Inc.; and that the statements made and the matters set forth therein are true and correct to the best of my knowledge, information, and belief.

John R McGaha

John R. McGaha

STATE OF LOUISIANA
WEST FELICIANA PARISH

SUBSCRIBED AND SWORN TO before me, Notary Public, in and for the Parish and State above named, this 17th day of November, 1995.

(SEAL)

Claudia F. Hurst

Claudia F. Hurst
Notary Public

My Commission expires with life.

GRAND GULF NUCLEAR STATION
AND
RIVER BEND STATION

DRYWELL LEAK RATE TESTING REQUIREMENTS

DISCUSSION AND JUSTIFICATION

A. AFFECTED TECHNICAL SPECIFICATIONS

The following Technical Specifications are affected by the proposed change.

Limiting Condition for Operation (LCO)

3.6.5.1 Drywell
3.6.5.2 Drywell Air Locks
3.6.5.3 Drywell Isolation Valves

The proposed Technical Specifications and the associated Technical Specification Bases changes to be implemented following NRC approval of the proposed Technical Specification changes are detailed in Attachment 3 for Grand Gulf Nuclear Station (GGNS) and Attachment 4 for River Bend Station (RBS).

B. BACKGROUND

Primary Containment and Drywell Design

The Mark III primary containment was designed to be an improved primary containment for boiling water reactors compared to the former Mark I and Mark II primary containment designs. An objective of the design was to locate more of the high energy auxiliary systems (e.g., reactor water cleanup system heat exchangers) within the pressure-suppression primary containment. The Mark III primary containment design basically features a separate volume within the primary containment to encapsulate the reactor coolant system and other high energy system piping. This volume is referred to as the drywell; the volume outside the drywell but within the primary containment is referred to as the wetwell. High energy lines transiting through the wetwell such as the main steam lines and feedwater lines are encapsulated by guard pipes or enclosures to direct energy to the drywell in case of a piping rupture.

The drywell is designed to divert the energy released (pressure, mass, and heat) as a result of a design basis large break loss-of-coolant-accident (LOCA) to the suppression pool via multiple vents cast into the drywell wall. The suppression pool is a mass of water common to the drywell and wetwell volumes and serves as a heat sink for the energy released during a large break LOCA. The horizontal vents in the drywell wall are beneath the normal water level of the suppression pool. The suppression pool forms a water seal between the drywell and wetwell volumes. These volumes are assured per the Technical Specifications which specifies the minimum suppression pool water level.

The safety function of the Mark III primary containment during a LOCA in the drywell is contingent on the integrity of the drywell. Leakage through the drywell which bypasses the suppression pool has a direct impact on the primary containment peak pressure analysis. Analyses of the primary containment design assumed limited drywell bypass leakage as a design basis. Mark III primary containment design efforts included evaluating a spectrum of break sizes to assure that the pressure-suppression primary containment would perform its safety function. The small break LOCA within the drywell was determined to be the limiting fault accident for the drywell design criterion of bypass leakage and is discussed in Safety Analyses Report (SAR) Section 6.2.1.1 for each unit (Ref. 1 and Ref. 2). The limiting case for drywell integrity is based on total leakage through all drywell paths other than the drywell-to-suppression pool vents.

The drywell is a Class 1 seismic structure and features reinforced concrete walls and floor in a vertical right cylinder geometry. The ceiling is also reinforced concrete with a removable steel dome known as the drywell head. The floor is common with the primary containment basemat.

Penetrations through the drywell enable the passage of piping, ventilation, and electrical portions of various systems. Electrical penetrations feature a sealing medium which surrounds the cables within the penetration. Ventilation and piping penetrations feature manual or automatic isolation valves; some piping penetrations and the vacuum breakers feature check valves and/or isolation valves. The drywell equipment hatch, drywell personnel hatch (RBS only), and drywell personnel air lock also penetrate the drywell boundary. The drywell equipment hatch is designed to be removed during plant outages. The equipment hatch utilizes two compression seals to maintain leaktightness.

Valves which prevent leakage from the drywell into the primary containment are considered drywell isolation valves and leakage through these valves contributes to the maximum allowable drywell leakage. Valves which prevent leakage from the drywell and primary containment to the secondary containment or environment are considered primary containment isolation valves. Leakage through these valves is tested in accordance with 10 CFR 50 Appendix J and contributes to the maximum allowable primary containment leakage. Leakage through primary containment isolation valves is not considered drywell leakage in the design basis analyses.

The drywell air lock is designed to provide personnel access (ingress and egress) to the drywell for maintenance while its safety function is to maintain drywell integrity. The drywell air lock features two doors. Each air lock door closes positively against the air lock structure by means of a latching mechanism. The drywell air lock door latching mechanisms are interlocked to each other to ensure that at least one door is maintained in the latched closed position. The latching and interlock mechanisms ensure that the drywell air lock does not provide a gross leakage path and compromise drywell integrity. Each of the two drywell air lock doors and the drywell personnel hatch feature two inflatable seals to minimize leakage.

The drywell is designed to perform its safety function with calculated maximum bypass leakage rates as identified in Section F on Tables 1 and 2 for its limiting fault. The limiting fault that defines the limiting allowable drywell leakage rate is the postulated small break LOCA. The primary containment is designed to perform its safety function during the large break LOCA with a maximum drywell bypass leakage rate which is on the order of a magnitude higher.

Preoperational Testing

The preoperational testing program for the drywell also included extensive monitoring for structural deformation while the drywell was pressurized to its rated pressure in a graduated fashion (i.e., step pressure increases). The drywell performed better than anticipated during this phase. Results indicated that the drywell was not stressed as much as predicted and responded in the elastic stress range. In addition, no signs of distress or damage to either the concrete or liner were detected (RBS did experience some insignificant cracking of the concrete). Therefore, the design and construction of the drywell was deemed sufficient to maintain the design pressure load. Additional details of the preoperational testing program for the drywell structure are described in References 2 and 3.

The drywell is typically exposed to essentially 0 psig during normal plant operation and 3 psig during drywell bypass leak rate testing. These pressures are considerably lower than the structural integrity test pressure and are less likely to initiate a crack or cause an existing crack to grow. Visual inspections of the accessible drywell surfaces that have been performed since the structural integrity tests have not revealed the presence of additional cracking or other abnormalities.

C. PROPOSED TS CHANGES

The following are the specific changes to the Technical Specifications which are requested:

1. The Surveillance Frequency for the drywell bypass test (SR 3.6.5.1.1) is changed from 18 months to 10 years with an increased testing frequency required if performance degrades. Application of the SR 3.0.2 allowance to extend the Surveillance Frequency by 25% for scheduling purposes is restricted to 12 months on the 10 year frequency.

2. The following changes are requested for the drywell air lock testing:

    a. The leak rate surveillance is moved from the air lock LCO (3.6.5.2) to the drywell LCO (3.6.5.1).

    b. The requirement for the air lock to meet a specific overall leakage limit is deleted.

    c. Note 1 that stated that an inoperable air lock door does not invalidate the previous air lock leakage test is deleted.

    d. The GGNS test pressure for the air lock leakage test is changed from 11.5 psig to 3 psid.

    e. The RBS SR 3.6.5.2.4 Note 2 which required that the air lock leakage test at 3 psid be preceded by pressurizing the air lock to 19.2 psid is moved to the Bases.

    f. The Surveillance Frequency for the air lock leakage and interlock testing is changed from 18 months to 24 months.

3. The Actions Notes in the drywell air lock LCO (3.6.5.2) and the drywell isolation valve LCO (3.6.5.3) which identify that the Actions required by drywell LCO (3.6.5.1) must be taken when the drywell bypass leakage limit is not met is deleted. These Notes are no longer required with the relocation of all drywell leakage rate testing to the drywell LCO. Also, LCO 3.6.5.2 Required Action C.1 and its associated completion time is deleted for the same reason. These changes are administrative format changes.

4. The RBS SR 3.6.5.2.1 requirement that the drywell air lock seal leakage rate meet a specific leakage limit is deleted since the ability of the drywell to perform its safety

function is not dependent on the drywell air lock seals meeting a specific leakage limit other than the total drywell leakage limit. This SR is also moved from LCO 3.6.5.2 to LCO 3.6.5.1 consistent with the other air lock leakage testing requirements.

D. JUSTIFICATION

1. The following is the justification for changing the Surveillance Frequency for the drywell bypass test (SR 3.6.5.1.1) from every refueling outage to every 10 years with an increased testing frequency required if performance degrades.

   a. Basis for Current Surveillance Requirements

   Surveillances for drywell bypass leakage were established to ensure that the pressure-suppression primary containment will be capable of performing its safety function when subjected to accident conditions. Surveillance criteria and schedules were developed without any previous operating experience for this primary containment design. GGNS was the first domestic application of a Mark III primary containment. As such, drywell surveillances were developed using engineering judgment only since no Mark III operating experience existed. The assortment of drywell surveillances and conservative acceptance criteria constituted operating restrictions which were imposed because of the lack of operating experience.

   Surveillance requirements developed previously for new designs were established in order to conservatively satisfy regulatory practices until reliable performance of the design was established. The periodic surveillance for drywell bypass leakage was specified to be performed at least once per 18 months to coincide with refueling outages. In addition, drywell bypass leakage surveillance program requirements were developed with correlations to the 10 CFR 50 Appendix J requirements at the time for primary containment with increased conservatisms. The added conservatisms were excessive because the design basis allowable leakage for the drywell (e.g., 35,000 scfm for GGNS) is much greater than that for the primary containment (e.g., < 10 scfm for GGNS). These elements combine to cause exhaustive and undue surveillance efforts for equipment and structures which are generally passive in performing their safety function.

   Surveillance activities presently in effect to ensure drywell safety function include drywell penetration configuration surveillances; the drywell structural integrity inspections; the drywell bypass leakage rate tests; multiple drywell air lock tests including air lock volume leakage rate testing, air lock door seal leak rate testing, air lock door seal instrumentation calibration and functional checks, and air lock door interlock mechanism functional verification; monitoring drywell temperature; monitoring drywell differential pressure relative to the primary containment; monitoring suppression pool temperature and level; and drywell vent and purge operational configuration.

b. <u>Drywell Bypass Leakage Surveillance History Experience</u>

Reliability of drywell integrity (and therefore safety function) has been demonstrated by multiple bypass leakage tests since construction. Surveillances since GGNS and RBS construction have resulted in consistent, acceptable values. A total of sixteen (16) drywell bypass leakage tests have been completed successfully between the two units spanning a period in excess of thirteen (13) years, with nineteen (10 years at GGNS and 9 years at RBS) commercial operation years between the two units. Results of GGNS drywell bypass leakage surveillances are included in Section F Table 3 and results of RBS drywell bypass leakage surveillances are included in Section F Table 4. The surveillance history for drywell bypass leakage clearly demonstrates the high reliability and integrity of the drywell.

c. <u>Applicability of Performance-Based Approach</u>

Performance-based testing permits one to achieve a desired system/component performance goal in a manner which may be more effective than regulatory-driven approaches of the past. It introduces program flexibility that may be necessary to optimize other performance objectives as well. A performance-based approach is being proposed for the GGNS and RBS drywell bypass leakage test program.

Physical bypass leakage tests have confirmed numerous times that drywell bypass leakage does not exceed the design basis limit nor approach the more conservative Technical Specification post testing acceptance limit specified by the surveillance requirements. Test data indicates reliability of the drywell structure and its isolation components.

The overall goal of the drywell bypass leakage test is to ensure that leakage from the drywell to primary containment will be within acceptable limits should the drywell become pressurized under postulated accident conditions. Overall performance goals for such a test may therefore include acceptance criteria for the leakage rate and a high level of confidence that the leakage will be within this limit when challenged. No changes to the GGNS and RBS current acceptance criteria are proposed by this submittal. GGNS and RBS do propose an extension to the test interval, which could hypothetically impact the probability that the bypass leakage is in excess of this limit when challenged at some point between tests. The program proposed ensures that the probability of non-severe accident caused excessive drywell leakage resulting in primary containment failure is effectively eliminated as a significant contributor to overall plant risk.

The proposed changes consider a variety of factors important to an effective performance-based test program:

1. The program recognizes that past performance is an important means of identifying and correcting performance problems. In over nineteen reactor years of operation, GGNS and RBS have not exceeded the very conservatively established drywell bypass leakage limits. Furthermore, no adverse trends in drywell bypass testing have been observed.

2. The risk impact of postulated drywell bypass leakage is small. This is due to:

   (a) the low frequency of events which would challenge containment integrity due to drywell leakage,
   (b) the high probability that the drywell will perform its intended function, and
   (c) design margins available to primary containment failure due to overpressurization caused by drywell leakage.

3. Plant administrative and maintenance programs correct performance problems in a timely manner.

4. The drywell is essentially a passive barrier. As a result, the proposed test program, which is based on performance criteria, provides assurance that the overall performance goals will be met. Performance problems will be addressed and the testing schedule adjusted if necessary to ensure ongoing acceptable performance.

d. Risk Impact of Proposed Changes

The purpose of the drywell leak testing program is to ensure that leakage from the drywell to the primary containment is within the design allowable limits in case the drywell's safety function is challenged. Although the change does not increase the probability of development of a bypass leakage path, the proposed change does increase the probability that excessive drywell leakage paths could go undetected between tests and, therefore, potentially increases the probability of primary containment failure due to excessive drywell leakage. This could result in a higher post-accident release from primary containment.

The proposed changes do not introduce any new accident scenarios, do not affect other accident mitigation functions, nor do they contribute to the probability of the initiating accident. Although, drywell bypass leakage can occur through potential cracks in the drywell structures and through drywell isolation valves, the proposed changes do not significantly increase the probability that the drywell will not be able to perform its design function when required.

Drywell Structure (Passive Structural Integrity)

The preoperational testing program for the drywell included extensive monitoring for structural deformation while the drywell was pressurized to its rated pressure in a graduated fashion (i.e., step pressure increases). The drywell performed better than anticipated during this phase. Results indicated that the drywell was not stressed as much as predicted and responded in the elastic stress range. In addition, no signs of distress or damage to either the concrete or liner were detected (RBS did experience some insignificant cracking of the concrete). Therefore, the design and construction of the drywell was deemed sufficient to maintain the design pressure load.

The drywell is typically exposed to essentially 0 psig during normal plant operation and 3 psig during drywell bypass leak rate testing. These pressures are considerably lower than the structural integrity test pressure and are less likely to initiate a crack or cause an existing crack to grow. Potential cracking of the BWR 6 drywell was studied in NEDO-10977 (Ref. 7). This study concluded that under normal operational conditions, only minor surface cracking of the structure will occur, that this cracking is the result of drying shrinkage of the concrete, and that no through wall cracking will occur. Visual inspections of the accessible drywell surfaces that have been performed since the structural integrity tests have not revealed the presence of additional cracking or other abnormalities and support the studies findings. Therefore, additional cracking of the drywell structure is not expected due to testing or operation and it is not considered credible for the drywell structure to begin to leak sufficiently to impact the design drywell bypass leakage limit.

The issues associated with the passive structural integrity of the drywell are quite similar to those addressed for the primary containment in determining the appropriate Type A testing interval under 10 CFR 50 Appendix J. Similar to the primary containment, absent actual accident conditions, structural deterioration is a gradual phenomenon which, we believe, requires periods of time well in excess of the proposed 10 year drywell bypass testing interval. We are unaware of any information developed in the industry which identifies relatively quick-acting degradation mechanisms which could adversely affect the drywell integrity.

The requested surveillance interval and the associated justification of the change is consistent with the change requested by GGNS for the primary containment (Ref. 5) and the associated approval by the NRC Staff of a 10 year Integrated Leak Rate Testing interval for the primary containment (Ref. 6). With respect to the passive structural integrity, the basis for this change was confirmed in NUREG-1493 for the Type A test and forms the basis for 10 CFR 50 Appendix J Option B.

Drywell Penetration Isolation (Active Drywell Integrity)

The design basis allowable leakage for the limiting event, the small break LOCA, for the drywell (e.g., ≈35,000 scfm for GGNS and ≈46,000 scfm for RBS) is extremely high. Additionally, an even higher allowable leakage can realistically be accommodated by the primary containment due to the margins in the containment design. When taking into account the difference between the 15 psi primary containment design pressure used to set the drywell leakage limit and the pressure in excess of 50 psi where the primary containment is expected to fail, the allowable drywell leakage without causing primary containment failure is approximately 60,000 scfm for GGNS and 75,000 scfm for RBS. By comparison the maximum amount of primary containment leakage is less than 10 scfm. The insensitivity of the primary containment's ability to perform its safety function to the rate of drywell leakage provides a substantial margin to loss of the drywell safety function that is not normally available for safety systems.

The active components which could contribute to drywell leakage and potentially result in exceeding the maximum acceptable drywell bypass leakage to protect primary containment integrity are the drywell isolation valves. These valves prevent leakage from the drywell into the primary containment; therefore, any leakage through these valves contributes to the maximum allowable drywell leakage Valves which prevent leakage from the drywell and primary containment to the secondary containment or environment are considered primary containment isolation valves. Leakage through primary containment isolation valves is tested in accordance with 10 CFR 50 Appendix J and contributes to the maximum allowable primary containment leakage. Leakage through primary containment isolation valves is not considered drywell leakage in the design basis analyses since it does not contribute to primary containment pressurization. Therefore, the proposed extension to the drywell bypass leakage rate testing interval will only impact the potential for excess leakage through those valves which are considered drywell isolation valves and does not impact or overlap the testing of valves required by 10 CFR 50 Appendix J.

Penetration Flow Paths ≤ 10 inches:

The effect of leakage through drywell isolation valves on the total drywell leakage rate is dependent on the size of the associated penetration flow path (i.e., small penetrations have a smaller potential impact on drywell leakage than do large penetrations). The drywell allowable leakage rate is so large that penetration flow paths less than or equal to 10 inches in diameter can have only a negligible impact on the total bypass leakage.

To demonstrate the effect of an excessively leaking 10 inch drywell penetration on compliance with the allowable drywell bypass leakage, the GGNS drywell vacuum relief system will be used as an example. The drywell vacuum relief system at GGNS has 4 sets of isolation valves isolating three 10 inch drywell penetrations. One drywell penetration is isolated by two sets of drywell post LOCA vacuum relief subsystems in parallel, each consisting of one butterfly valve and a check valve. The other two penetrations are each isolated by a drywell purge vacuum relief subsystem consisting of one butterfly valve and two check valves. To verify the ability of these systems to perform their drywell vacuum relief function, calculations of the effective $A/\sqrt{k}$ for these systems for forward flow (i.e., flow from the primary containment into the drywell) were performed. The calculated effective $A/\sqrt{k}$ for these systems for forward flow are as follows:

1. Drywell post LOCA vacuum relief subsystem A — $0.255\ ft^2$
2. Drywell post LOCA vacuum relief subsystem B — $0.255\ ft^2$
3. Drywell purge vacuum relief subsystem A — $0.192\ ft^2$
4. Drywell purge vacuum relief subsystem A — $0.188\ ft^2$

As can be seen by these calculated effective $A/\sqrt{k}$'s it will take a minimum of all four 10 inch penetration flow paths failing full open to challenge the allowable drywell bypass leakage ($0.9\ ft^2$). This result is very conservative since it does not take into account the lower effective $A/\sqrt{k}$ the penetration flow paths would have if the flow through the penetration was reverse flow (the direction that drywell bypass flow would be) through check valves. Also, it does not take into account the margins to actual containment failure due to pressurization which would require an $A/\sqrt{k}$ of approximately $1.5\ ft^2$.

The probability that a penetration flow path will leak excessively due to valve failure thereby contributing to defeating the drywell safety functions when called upon is the probability that the isolation valves in the flow path fail open plus the probability that the valves close but leak excessively.

$$P_{pent} = P_{open\ pent} + P_{leak\ pent}$$

P_{pent}	=	Probability that a penetration flow path will leak excessively due to valve failure.
$P_{open\ pent}$	=	Probability that the isolation valves in the penetration flow path fail open.
$P_{leak\ pent}$	=	Probability that the isolation valves in the penetration flow path leak excessively.

NUREG-4550 identified that the generic probability a valve in one of these lines would fail to close is on the order of 1E-3 resulting in a failure probability ($P_{open\ pent}$) of 1E-6 per penetration flow path. This failure probability ($P_{open\ pent}$) is not affected by these requested changes. The surveillance interval for verification of the valves' ability to close is set by the Inservice Testing Program. This submittal does not change the Inservice Testing Program frequencies; therefore, this submittal does not affect the probability that a valve will fail to close or is failed open prior to the event.

Work performed to support GGNS's recent Appendix J exemption (Ref. 5) identified that the probability that a penetration flow path would leak excessively considering a 10 year surveillance interval ($P_{leak\ pent}$) is 1E-4. The penetration failure rate assumption of 1E-4 is very conservative since if the valves were only leaking and not failed full open the leakage rate through the penetration flow path will be much lower. In other words, "excessive leakage" in terms of 10 CFR 50 Appendix J is much smaller than "excessive leakage" for the drywell integrity (> 10 scfm compared to ≈35,000 scfm). For leakage to be considered "excessive" for a drywell penetration flow path, the leakage must be on the order of the flow through a fully open penetration flow path. Even with the conservative assumption that the leakage rate through the leaking penetration flow path is equal to the leakage through a fully open penetration flow path it would still take at least four ≤ 10 inch penetration flow paths leaking excessively to impact the drywell bypass leakage limit. With a probability that a penetration flow path will leak excessively considering a 10 year surveillance interval ($P_{leak\ pent}$) of 1E-4, the probability of at least 4 penetration flow paths leaking excessively is negligible ($P_{leak\ drywell} \approx$ 1E-16). Therefore, the potential for excessive leakage due to an extended test interval through penetration flow paths ≤ 10 inches will not realistically affect the ability of the drywell to perform its safety function.

Penetration Flow Paths > 10 inches:

Having screened out all flow paths ≤10 inches the remaining penetration flow paths which could affect the ability of the drywell to perform its safety function can be individually reviewed. The following are the active drywell penetration flow paths which are >10 inches:

1. Low Pressure Coolant Injection (LPCI) A and B injection lines	These lines are isolated by Pressure Isolation Valves (PIVs). These valves are required to be leakage rate tested every 18 months by LCO 3.4.6. Therefore, this requested change does not affect the probability of these valves having excessive leakage.
2. Drywell Air Purge Supply and Exhaust - (2 penetration flow paths)	These are 20 inch for GGNS and 24 inch for RBS penetration flow paths with an effective $A/\sqrt{k}$ of approximately 1 ft^2. These valves are required to be maintained closed in MODES 1, 2, and 3 and verified closed every 31 days except under certain conditions by SR 3.6.5.3.1. These penetrations are further discussed below.
3. Drywell air lock	Leakage rate through the drywell air lock will continue to be tested every refueling outage by Technical Specifications LCO 3.6.5.1. Additionally, GGNS has evaluated the effect of total drywell air lock seal failure and found that the resulting leakage past the seals would not result in the drywell being unable to perform its safety function.
4. Drywell personnel hatch (RBS only)	The seal leakage of the personnel hatch will continue to be required to be tested every refueling outage by Technical Specifications LCO 3.6.5.1.

As can be seen from the above, the drywell purge supply and exhaust penetration flow paths are the only significant drywell penetration flow paths whose surveillance interval could be adversely affected by the proposed change. For the following reasons the potential for excessive drywell purge supply and exhaust penetration leakage to result in primary containment failure due to excessive drywell leakage is not significant:

1. Even assuming that one of the purge and exhaust penetration flow paths is full open and other drywell bypass leakage is equal to 10% of the drywell bypass leakage limit, the primary containment should not fail due to overpressurization caused by drywell leakage. For GGNS the design limit for the limiting event, the small break LOCA, of 0.9 ft^2 could conceivably be exceeded (1 ft^2 + .09 ft^2 = 1.09 ft^2) but the margin to actual primary containment failure at $\geq$ 50 psi is sufficient to mitigate the effects. For RBS the design limit for the limiting event, the small break LOCA, of 1.15 ft^2 (Technical Specification limit is based on a more conservative limit of 1.0 ft^2) should continue to be met (1 ft^2 + .1 ft^2 = 1.1 ft^2).

2. These valves are required in MODES 1, 2, and 3 to be maintained and periodically verified closed except under certain conditions by Technical Specification SR 3.6.5.3.1. Therefore, it is unlikely that penetration flow path will be open when a postulated event occurs and, since they are only cycled infrequently, degradation of the sealing capability of the valves is not expected to be caused by their cycling.

3. These valves receive automatic isolation signals from the primary containment and drywell isolation system. The operability of this automatic isolation capability is required by the Technical Specifications.

4. The Inservice Testing Program requirements for testing the valve's ability to close are not affected by this proposed change.

As discussed previously, the probability that a penetration flow path will leak excessively considering a 10 year surveillance interval ($P_{leak\ pent}$) is 1E-4. As a result, a conservative failure probability for a drywell purge supply or exhaust penetration flow path to leak excessively is on the order of 1E-4. The penetration failure rate assumption of 1E-4 is very conservative since if the valves were only leaking and not failed full open the leakage rate through the penetration flow path will be much lower. Even with the conservative assumption that the leakage rate through the leaking drywell purge supply or exhaust penetration flow path is equal to the leakage through a fully open drywell purge supply or exhaust penetration flow path it would still take at least an additional flow path leaking excessively to cause the primary containment to fail as a result of overpressurization. Since it will take at least 2 penetration flow paths leaking excessively, when combined with the frequency of experiencing a core damage event (1E-5 events/year) the resulting probability that drywell purge supply and exhaust penetration leakage resulting from an extended surveillance interval will result in primary containment failure due to excessive drywell leakage is not significant ($P_{leak\ drywell}$ is on the order of 1E-13).

The proposed Technical Specification changes have no significant impact on the GGNS Individual Plant Examination (IPE) (Ref. 3) or the RBS IPE (Ref. 4) conducted per NRC Generic Letter 88-20. The IPEs considered overpressurization failure of primary containment as part of the primary containment performance assessment. Due to the magnitude of acceptable drywell leakage and the extremely low probabilities of achieving such leakage as discussed above, primary containment failure due to preexisting excessive drywell leakage was considered a non-significant contributor to primary containment failure. Primary containment overpressurization failure can occur with or without pre-existing excessive drywell leakage in a severe accident. This is due to physical phenomena associated with potentially extreme environmental conditions inside primary containment following a severe accident. However, the calculated frequency of such extreme conditions is very small. The proposed changes do not impact the IPE evaluated phenomena causing primary containment overpressurization failure nor significantly increase the probability that the drywell has preexisting excessive leakage and therefore would not contribute to these accident scenarios.

e. <u>Cost of Surveillances</u>

The existing Technical Specifications SR 3.6.5.1.1 surveillance frequency causes excessive surveillance efforts for the drywell. Previous drywell testing has demonstrated the drywell as being reliable and capable of performing its safety function. Manpower and equipment necessary to test to the present requirements of Technical Specifications SR 3.6.5.1.1 costs each unit approximately $50K for staff and test equipment and $450K for replacement power since the surveillance requires critical path time during a plant outage. A savings of $7.5M has been estimated for the remaining life of the plant for GGNS and $8.5M for RBS for a total savings of $16M with the proposed surveillance frequency for Technical Specifications SR 3.6.5.1.1. In addition, radiation exposure to personnel will be reduced as a result of these changes.

f. <u>Increased Surveillance Frequency</u>

Following a drywell bypass test where the drywell bypass leakage is greater than the drywell bypass leakage limit, bypass leakage tests will be required at an increased frequency (every 4 years). As previously discussed, the types of failures that result in the drywell bypass leakage rate limit not being met, would be gross failures of several systems. The effectiveness of the repairs following the failed test will be demonstrated by the Technical Specification requirement to restore the as-left leakage to ≤ 10% of the drywell leakage limit. Due to the gross nature of the failures which would be required to result in a failure of the drywell bypass leak rate test the corrective action is expected to be a one time action (e.g., modify programs to prevent reoccurrence). Additionally, a large margin for degradation will be provided by restoring the leakage to ≤ 10% of the drywell leakage limit. Therefore, the 4 year frequency proposed following a single test failure provides an adequate level of assurance of the availability of the drywell and provides an economic incentive for the utility to ensure that the failures which caused the drywell failure are resolved.

Following two consecutive drywell bypass tests where the drywell bypass leakage was greater than the drywell bypass limit the frequency will be returned to the current frequency of every refueling outage. This frequency will continue until two consecutive test are performed that find that the drywell bypass leakage rate is less than the drywell bypass leakage rate limit.

2. The following is the justification for the changes to the drywell air lock surveillances.

   a. Drywell leakage rate requirements are the essence of drywell operability as required by LCO 3.6.5.1. Leakage rates discovered outside limits will always clearly result in entering the actions for drywell inoperability (LCO 3.6.5.1) since all drywell leakage rate surveillances will be required by LCO 3.6.5.1. LCO 3.6.5.1 provides the appropriate required actions if drywell leakage is not met by requiring the commencement of a shutdown to COLD SHUTDOWN if the leakage is not corrected within one hour. This change is an administrative format change only.

b. The requirement for the drywell air lock to meet a specific overall leakage limit is deleted since the ability of the drywell to perform its safety function is not dependent on the air lock meeting a specific leakage limit. The limiting case for drywell bypass leakage is based on total leakage through all drywell paths other than the suppression pool vents. Total drywell bypass leakage from all paths (including the air lock) should not exceed the acceptable limit of drywell bypass leakage. The extremely conservative drywell air lock leakage requirements should not be used to single out leakage paths for total drywell bypass leakage criteria.

c. The SR Note 1 which states that an inoperable air lock door does not invalidate the previous air lock leakage test is deleted. This Note incorrectly implied that the drywell leakage limit could be exceeded due to an inoperable door without taking the actions for an inoperable drywell. Drywell leakage rate requirements are the essence of drywell operability as required by LCO 3.6.5.1. Leakage rates discovered outside limits should always clearly result in entering the actions for drywell inoperability.

d. The GGNS minimum test pressure for the air lock leakage test is changed from 11.5 psig to 3 psid. This change is made so that the air lock test can be performed at the pressure occurring during the limiting event which determined the maximum allowable leakage rate.

   The BWR/6 drywell air lock is typically tested similar to primary containment air locks. However, the drywell air lock is not a direct leakage path from the primary containment and therefore 10 CFR 50 Appendix J test requirements do not apply. Specifically, the peak primary containment pressure (11.5 psig) is the required test pressure for primary containment penetrations including the primary containment air lock; however, the drywell air lock will not be exposed to this same pressure differential. The appropriate test pressure, as reflected in other licensed BWR/6 technical specifications, is the differential pressure at which the first suppression pool blowdown vents clear (i.e., the maximum sustainable post-accident differential pressure).

e. The RBS Note 2 requirement that the air lock leakage test at 3 psid be preceded by pressurizing the air lock to 19.2 psid is moved to the Technical Specifications Bases. The 19.2 psid pressure does not occur during the limiting event which determined the maximum allowable leakage rate. The allowable leakage rate for the event during which the air lock could experience this pressure differential is an order of magnitude higher. In the Technical Specifications Bases the relocated information will be maintained in accordance with 10 CFR 50.59 and subject to the change control provisions in Chapter 5 of Technical Specifications.

f. The drywell air lock leakage surveillance and interlock surveillance is changed from 18 months to 24 months. The proposed leakage rate testing frequency is consistent with the NEI 94-01 guidance for testing primary containment air locks. The BWR/6 drywell air lock is typically tested similar to primary containment air locks, even though the drywell air lock is not a direct leakage path from primary containment and, therefore, 10 CFR 50 Appendix J test requirements do not apply.

The drywell air lock's use is limited during plant operation due to radiation and temperature in the BWR/6 drywell. Since sufficient confidence in the door's sealing capability is assured considering past performance, and the air lock door usage is very low throughout an operating cycle, it is justified to allow performance of these tests at refueling-outage intervals whether the unit is on a 18 month or a 24 month refueling cycle.

3. The Actions Notes in the drywell air lock LCO (3.6.5.2) and the drywell isolation valve LCO (3.6.5.3) that identifies that the Actions required by drywell LCO (3.6.5.1) must be taken when the drywell bypass leakage limit is not met is deleted. These Notes are no longer required with the relocation of all drywell leakage rate testing to the drywell LCO. Also, LCO 3.6.5.2 Required Action C.1 and its associated completion time is deleted for the same reason. As discussed in section D.2.a, drywell leakage rate requirements are the essence of drywell operability as required by LCO 3.6.5.1. Leakage rates discovered outside limits will always clearly result in entering the actions for drywell inoperability (LCO 3.6.5.1) since all drywell leakage rate surveillances will be required by LCO 3.6.5.1. These changes are administrative format changes.

4. The RBS SR 3.6.5.2.1 requirement for the drywell air lock seal leakage rate to meet a specific leakage limit is deleted since the ability of the drywell to perform its safety function is not dependent on the drywell air lock seals meeting a specific leakage limit other than the total drywell leakage limit. The limiting case for drywell bypass leakage is based on total leakage through all drywell paths other than the suppression pool vents. Total drywell bypass leakage from all paths (including the drywell air lock) should not exceed the acceptable limit of drywell bypass leakage. The extremely conservative drywell air lock seal leakage requirements should not be used to single out leakage paths for total drywell bypass leakage criteria.

   The requirements of RBS SR 3.6.5.2.1 are moved to LCO 3.6.5.1 because drywell leakage rate requirements are the essence of drywell operability as required by LCO 3.6.5.1. In the revised presentation proposed, leakage rates discovered outside limits will always clearly result in entering the actions for drywell inoperability (LCO 3.6.5.1) since all drywell leakage rate surveillances will be required by LCO 3.6.5.1. LCO 3.6.5.1 provides the appropriate required actions if drywell leakage is not met by requiring the commencement of a shutdown to cold shutdown if the leakage is not corrected within one hour. This change is an administrative format change only.

E. SIGNIFICANT HAZARDS CONSIDERATION

Entergy Operations, Inc. proposes to change the current Grand Gulf Nuclear Station (GGNS) and River Bend Station (RBS) Technical Specifications. The specific proposed changes are:

1. The Surveillance Frequency for the drywell bypass test is changed from 18 months to 10 years with an increased testing frequency required if performance degrades.

2. The following changes are requested for the drywell air lock testing: (a) the leakage rate surveillance is moved from the air lock Limiting Condition for Operation (LCO) to the drywell LCO, (b) the requirement for the air lock to meet a specific overall leakage limit is deleted, (c) the Note that an inoperable air lock door does not invalidate the previous air

lock leakage test is deleted, (d) the GGNS test pressure for the air lock leakage test is changed from 11.5 psig to 3 psid, (e) the RBS Note which required that the air lock leakage test at 3 psid be preceded by pressurizing the air lock to 19.2 psid is moved to the bases, and (f) the Surveillance Frequency for the air lock leakage test and interlock test is changed from 18 months to 24 months.

3. The Actions Notes in the drywell air lock LCO and the drywell isolation valve LCO that identifies that the Actions required by the drywell LCO must be taken when the drywell bypass leakage limit is not met is deleted.

4. The RBS requirement for the drywell air lock seal leakage rate to meet a specific leakage limit is deleted.

The Commission has provided standards for determining whether a no significant hazards consideration exists as stated in 10 CFR 50.92(c). The proposed changes involve the withdrawal of operating restrictions previously imposed because acceptable operation of the Mark III primary containment design had not been demonstrated at the time of licensing. As published in the Federal Register regarding no significant hazards consideration criteria, granting of a relief, based upon demonstration of acceptable operation from an operating restriction that was imposed because acceptable operation had not yet been demonstrated does not involve a significant hazards consideration (Ref. 48 FR 14870). Furthermore, a proposed amendment to an operating license involves no significant hazards consideration 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.

Entergy Operations, Inc. has evaluated the no significant hazards consideration in its request for this license amendment, even though the above-mentioned criterion is satisfied by this proposal. In accordance with 10 CFR 50.91(a), Entergy Operations, Inc. is providing the analysis of the proposed amendment against the three standards in 10 CFR 50.92(c). A description of the no significant hazards consideration determination follows:

I. The proposed change does not significantly increase the probability or consequences of an accident previously evaluated.

The requested changes are either administrative changes which clarify the format of the requirement or change the requirement to match the design bases of the plant, a change which relocates the requirement to the Technical Specification Bases, or a change in surveillance interval. Each of these types of change are discussed below:

1. The administrative changes clarify the format of the requirement or change the requirement to match the design bases of the plant. Clarifying administrative format of the Technical Specifications does not result in any changes to the Technical Specification requirements and, as a result, does not involve a significant increase in the probability or consequences of an accident previously evaluated. Also, changing the requirements of the Technical Specifications to more closely match the design bases of the plant will continue to assure that the plant will respond as assumed in the

accident analyses and, as a result, does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. The proposed changes relocate information to the Technical Specification Bases. In the Technical Specifications Bases the relocated information will be maintained in accordance with 10 CFR 50.59 and subject to the change control provisions in Chapter 5 of Technical Specifications. Since any changes to the Technical Specifications Bases will be evaluated per the requirements of 10 CFR 50.59, no increase (significant or insignificant) in the probability or consequences of an accident previously evaluated will be allowed. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

3. The proposed changes in frequency for the drywell bypass leakage and drywell air lock surveillances will continue to ensure that no paths exist through passive drywell boundary components that would permit gross leakage from the drywell to the primary containment air space and result in bypassing the primary containment pressure-suppression feature beyond the design basis limit. The Mark III primary containment system satisfies General Design Criterion 16 of Appendix A to 10 CFR Part 50. Maximum drywell bypass leakage was determined previously by reviewing the full range of postulated primary system break sizes. The limiting case was a primary system small break loss of coolant accident (LOCA) and yielded a design allowable drywell bypass leakage rate limit of approximately 35,000 scfm for GGNS and 46,000 scfm (the Technical Specification limit is based on a lower limit of 40,110 scfm) for RBS. The Technical Specifications acceptable limit for the bypass leakage following a surveillance is less than 10% of this design basis value. The most recent bypass leakage value was approximately 2.5% for GGNS and .91% for RBS of the design allowable leakage rate limit for the limiting event. EOI is committed to maintaining programmatic and oversight controls that ensure that drywell bypass leakage remains a small fraction of the design allowable leakage limit.

   The drywell is typically exposed to essentially 0 psig during normal plant operation and 3 psig during drywell bypass leak rate testing. These pressures are considerably lower than the structural integrity test pressure and are less likely to initiate a crack or cause an existing crack to grow. Visual inspections of the accessible drywell surfaces that have been performed since the structural integrity tests have not revealed the presence of additional cracking or other abnormalities. Therefore, additional cracking of the drywell structure is not expected due to testing or operation and, similar to the justification for the ten year 10 CFR 50 Appendix J Type A test interval, it is not considered credible for the passive drywell structure to begin to leak sufficiently to impact the design drywell bypass leakage limit.

   The primary containment's ability to perform its safety function is fairly insensitive to the amount of drywell leakage, thereby providing a margin to loss of the drywell safety function that is not normally available for safety systems. This insensitivity is demonstrated by the extremely high limiting event design basis allowable leakage for the drywell (e.g., 35,000 scfm for GGNS and 46,000 scfm for RBS). The limiting leakage is almost an order of magnitude higher for other events. Additionally, an even higher allowable leakage can be realistically accommodated by the primary containment due to the margins in the containment design. Because of the margins available, it will take valves in multiple penetration flow paths leaking excessively to cause the primary containment to fail as a result of overpressurization, the probability that drywell isolation valve leakage will result in primary containment failure due to excessive drywell leakage is not considered significant and this drywell/primary containment failure mode is not considered credible.

The proposed Technical Specification changes have no significant impact on the GGNS Individual Plant Examination (IPE) or the RBS IPE conducted per NRC Generic Letter 88-20. The IPEs considered overpressurization failure of primary containment as part of the primary containment performance assessment. Due to the magnitude of acceptable drywell leakage and the extremely low probabilities of achieving such leakage, primary containment failure due to preexisting excessive drywell leakage was considered a non significant contributor to primary containment failure. Primary containment overpressurization failure can occur with or without preexisting excessive drywell leakage in a severe accident. This is due to physical phenomena associated with potentially extreme environmental conditions inside primary containment following a severe accident. However, the calculated frequency of such extreme conditions is very small. The proposed changes do not impact the IPE evaluated phenomena causing primary containment overpressurization failure nor significantly increase the probability that the drywell has preexisting excessive leakage and therefore would not contribute to these accident scenarios.

For the reasons discussed above, the proposed changes do not have any significant risk impact to accidents previously evaluated and do not significantly increase the consequences of an accident previously evaluated. Additionally, drywell leakage is not the initiator of any accident evaluated; therefore, changes in the frequency of the surveillance for drywell leakage does not increase the probability of any accident evaluated.

Therefore, the proposed changes do not significantly increase the probability or consequences of an accident previously evaluated.

II. The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The requested changes are either administrative changes which clarify the format of the requirement or change the requirement to match the design bases of the plant, a change which relocates the requirement to the Technical Specification Bases, or a change in surveillance interval. Each of these types of change are discussed below:

1. The administrative changes in the Technical Specification requirements do not involve a physical alteration of the plant (no new or different type of equipment will be installed) nor does it change the methods governing normal plant operation. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

2. The proposed relocation of requirements does not involve a physical alteration of the plant (no new or different type of equipment will be installed) nor does it change the methods governing normal plant operation. The proposed change will not impose or eliminate any requirements. Adequate control of the information will be maintained in the Technical Specification Bases. Thus, the change proposed does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed change modifies the surveillance frequency for drywell bypass leakage and drywell air lock surveillances. The changes only impact the test frequency and do not result in any change in the response of the equipment to an accident. The changes do not alter equipment design or capabilities. The changes do not present any new or additional failure mechanisms. The drywell is passive in nature and the surveillance will continue to verify that its integrity has not deteriorated. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

III. The proposed change does not involve a significant reduction in a margin of safety.

The requested changes are either administrative changes which clarify the format of the requirement or change the requirement to match the design bases of the plant, a change which relocates the requirement to the Technical Specification Bases, or a change in surveillance interval. Each of these types of changes are discussed below:

1. The administrative changes in the Technical Specification requirements do not involve a physical alteration of the plant (no new or different type of equipment will be installed) nor does it change the methods governing normal plant operation. Thus, this change does not cause a significant reduction in the margin of safety.

2. The relocation of requirements will not reduce a margin of safety because it has no impact on any safety analysis assumptions. In addition, the requirements to be transferred from the Technical Specifications to the Technical Specifications Bases are the same as the existing Technical Specifications. Since any future changes to these requirements in the Technical Specifications Bases will be evaluated per the requirements of 10 CFR 50.59, no reduction (significant or insignificant) in a margin of safety will be allowed.

3. The proposed change modifies the surveillance frequency for drywell bypass leakage and associated air lock surveillances. Reliability of drywell integrity is evidenced by the measured leakage rate during past drywell bypass leakage surveillances. Appropriate design basis assumptions will be upheld, even when combined with the complementary bypass leakage surveillances as proposed. Drywell integrity will continue to be tested by means of the proposed periodic drywell bypass leakage test, performance of the drywell air lock door latching and interlock mechanism surveillance, and performance of additional surveillances including excercising of drywell isolation valves. The combination of these surveillances will provide adequate

assurance that drywell bypass leakage will not exceed the design basis limit. Margins of safety would not be reduced unless leakage rates exceeded the design allowable drywell bypass leakage limit. Therefore, the proposed change does not cause a significant reduction in the margin of safety.

Therefore, the proposed changes do not cause a significant reduction in the margin of safety.

F. TABLES

Table 1

GGNS Design Features

Drywell design pressure	30 psi
Primary containment design pressure	15 psi
Design drywell bypass leakage - small break LOCA with one containment spray	0.9 ft^2 (A / √k) ≈35,000 scfm at 3 psid
Design drywell bypass leakage - large break LOCA with no Containment Spray	4.3 ft^2 (A / √k) ≈167,000 scfm at 3 psid ≈840,000 scfm at 30 psid

Table 2
RBS Design Features

Drywell design pressure	25 psi
Primary containment design pressure	15 psi
Design drywell bypass leakage - small break LOCA with unit coolers	1.15 ft^2 (A / √k) ≈46,000 scfm at 3 psid (design) ≈40,110 scfm at 3 psid (Technical Specification)
Design drywell bypass leakage - large break LOCA with unit coolers	10.3 ft^2 (A / √k) ≈413,000 scfm at 3 psid

TABLE 3
GGNS DRYWELL BYPASS LEAKAGE SURVEILLANCES

TEST DATE	LEAK-RATE	RATIO OF DESIGN LIMIT	CALCULATED $A / \sqrt{k}$
01/82	0611 scfm	1.75%	0.016 ft^2
03/83*	1621 scfm	4.63%	0.042 ft^2
06/84	2599 scfm	7.43%	0.067 ft^2
11/85	2315 scfm	6.61%	0.060 ft^2
11/86 (RFO1)	1568 scfm	4.48%	0.040 ft^2
12/87 (RFO2)	1500 scfm	4.29%	0.039 ft^2
04/89 (RFO3)	1631 scfm	4.66%	0.042 ft^2
11/90 (RFO4)	1591 scfm	4.55%	0.041 ft^2
05/92 (RFO5)	0618 scfm	1.77%	0.016 ft^2
11/93 (RFO6)	0869 scfm	2.48%	0.022 ft^2

* NOTE: Initial test failed due to open drywell penetrations.

TABLE 4
RBS DRYWELL BYPASS LEAKAGE SURVEILLANCES

TEST DATE	LEAK-RATE	RATIO OF DESIGN LIMIT**	CALCULATED $A / \sqrt{k}$
04/85 (preop)	562 scfm	1.2%	0.01400 ft^2
12/87 (RFO1)	602 scfm	1.3%	0.01500 ft^2
05/89 (RFO2)	10 scfm	0.022%	0.00025 ft^2
11/90 (RFO3)	345 scfm	0.75%	0.00861 ft^2
08/92 (RFO4)	754 scfm	1.6%	0.01880 ft^2
06/94 (RFO5)	421 scfm	0.91%	0.01050 ft^2

** Technical Specification (TS) limit is an $A / \sqrt{k}$ of 1.0 ft^2; design limit for the limiting event, the small break LOCA, is an $A / \sqrt{k}$ of 1.15 ft^2.

G. REFERENCES

1. Grand Gulf Nuclear Station Updated Final Safety Analysis Report (UFSAR);

2. River Bend Station Updated Safety Analyses Report (USAR);

3. GNRO-92/00157, GGNS Response to Generic Letter 88-20 Supplement 1, dated December 23, 1992.

4. RBS Response to Generic Letter 88-20 Supplement 1, dated February 1, 1993.

5. GNRO-93/00100, Application for Exemption from 10 CFR 50 Appendix J and Proposed Amendment to the Operating License (PCOL-93/010), dated August 13, 1993.

6. GNRI-95/00087, Grand Gulf Nuclear Station, Unit 1 - Issuance of Exemption from the requirements of 10 CFR Part 50, Appendix J, Section III.D (TAC No. 87209), dated April 26, 1995.

7. NEDO-10977, General Electric Company, Drywell Integrity Study: Investigation of Potential Cracking for BWR/6 Mark III Containment, August 1973.