North Atlantic

North Atlantic Energy Service Corporation
P.O. Box 300
Seabrook, NH 03874
(603) 474-9521

The Northeast Utilities System

November 2, 2001

NYN-01083

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Seabrook Station
"Supplemental Information for
License Amendment Requests 01-04 and 01-05"

Enclosed herein is supplemental information that was requested by the Nuclear Regulatory Commission (NRC) which pertains to License Amendment Requests (LARs) 01-04 "Reactor Containment Integrated Leakage Rate Test Interval Extension" and LAR 01-05 "Administrative Changes to the Technical Specifications." These LARs were forwarded to the NRC by letters dated August 2, 2001 and August 6, 2001, respectively.

The supplemental information for LAR 01-04 is provided in Enclosures 1 and 2. Included within Enclosure 1 is an updated significant hazards determination. Included within Enclosure 2 is a revised copy of Engineering Evaluation EE-01-008, Revision 1, "PRA Evaluation: Risk Impact of Extending the Frequency of Containment Integrated Leak Rates Testing from 10 Years to 16 Years." Attachment A of EE-01-008, Revision 1 includes a sensitivity study to assist the NRC in their review of LAR 01-04 as requested during a telephone conference conducted on September 6, 2001. The information provided in Attachment A is consistent with the process employed by other licensees for recently submitted ILRT extension license amendment requests.

An updated significant hazards determination for LAR 01-05 is provided in Enclosure 3. It is requested that LAR 01-05 be issued by January 15, 2002. Although LAR 01-05 is primarily administrative, approval is requested by the above specified date to support activities related to refueling outage (OR08) that is scheduled to begin in May 2002. This will allow time to develop and implement the programs and procedures associated with the proposed Technical Specification changes.

A017

Should you have any questions concerning this response, please contact Mr. James M. Peschel, Manager - Regulatory Programs, at (603) 773-7194.

Very truly yours,

NORTH ATLANTIC ENERGY SERVICE CORP.

Ted C. Feigenbaum
Executive Vice President
and Chief Nuclear Officer

cc: H. J. Miller, NRC Region I Administrator
G.F. Wunder, NRC Project Manager, Project Directorate I-2
G.T. Dentel, NRC Senior Resident Inspector

STATE OF NEW HAMPSHIRE

Rockingham, ss. DATE

Then personally appeared before me, the above-named Ted C. Feigenbaum, being duly sworn, did state that he is the Executive Vice President and Chief Nuclear Officer of the North Atlantic Energy Service Corporation, that he is duly authorized to execute and file the foregoing information in the name and on the behalf of North Atlantic Energy Service Corporation and that the statements therein are true and accurate to the best of his knowledge and belief.

Marilyn R. Sullivan

Marilyn R. Sullivan, Notary Public
My Commission Expires: March 19, 2002

<u>ENCLOSURE 1 TO NYN-01083</u>

Updated Determination of Significant Hazards Determination for LAR 01-04

IV. DETERMINATION OF SIGNIFICANT HAZARDS FOR PROPOSED CHANGES

License Amendment Request (LAR) 01-04 proposes a change to the Seabrook Station Technical Specification (TS) 6.15, "Containment Leakage Rate Testing Program." LAR 01-04 proposes to revise TS 6.15 to take a one-time exception to the ten-year frequency of the performance-based leakage rate-testing program for ILRTs as required by NEI 94-01. The exception will permit the ILRT frequency to be extended to fifteen-years from October 30, 1992 (the date of the last test). The last sentence of the first paragraph of TS 6.15 will be revised to read as follows: "This program shall be in accordance the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak Test Program, dated September 1995," as modified by the following exception:

a. NEI 94-01 - 1995, Section 9.2.3: The first ILRT performed after October 30, 1992 shall be performed no later than October 29, 2007."

In accordance with 10 CFR 50.92, North Atlantic has concluded that the proposed changes do not involve a significant hazards consideration (SHC). The basis for the conclusion that the proposed changes do not involve a SHC is as follows:

1. *The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.*

The proposed change to the Seabrook Station Technical Specifications does not involve a significant increase in the probability or consequences of an accident previously analyzed. The proposed revision to TS 6.15 adds a one-time extension to the current interval for the ILRT test. It is proposed that the current test interval be extended from ten-years to fifteen-years from the date of the last ILRT performed on October 30, 1992. The proposed extension cannot increase the probability of an accident previously evaluated since the test interval extension does not involve modification of the plant, nor a change to the operation of the plant that could initiate an accident. The proposed extension of the ILRT does not involve a significant increase in the consequences of an accident. The increase in risk is very small because ILRTs identify only a few potential leakage paths that cannot be identified by local leakage rate [Type B and C] testing, and the leaks that have been found by ILRTs have been only marginally above existing requirements. An analysis of the 144 ILRT results including 23 failures, found that no ILRT failures were due to a containment liner breach. NUREG-1493 concluded that reducing the ILRT testing frequency to one per twenty years would lead to an imperceptible increase in risk.

Therefore, it is concluded that the proposed change to TS 6.15 does not involve a significant increase in the probability or consequence of an accident previously evaluated.

2. *The proposed changes do not create the possibility of a new or different kind of accident from any previously evaluated.*

The proposed change to Technical Specification 6.15 does not create the possibility of a new or different kind of accident from any previously evaluated. The proposed change adds a one-time extension to the current Integrated Leakage Rate Test frequency of ten-years to fifteen-years from the date of the last test. The proposed change cannot create the possibility of a new or different type of accident since there are no physical changes being made to the plant. Additionally, there are no changes to the operation of the plant that could introduce a new failure mode creating an accident.

3. *The proposed changes do not involve a significant reduction in the margin of safety.*

The proposed change does not involve a significant reduction in the margin of safety. The proposed revision to TS 6.15 adds a one-time extension to the current interval for the ILRT test. It is proposed that the current test interval be extended from ten-years to fifteen-years from the date of the last ILRT performed on October 30, 1992. A reduction in the ILRT frequency was found to lead to an imperceptible decrease in the margin of safety. The estimated increase in risk is very small because ILRTs identify only a few potential leakage paths that cannot be identified by local leakage rate [Type B and C] testing, and the leaks that have been found by ILRTs have been only marginally above existing requirements. A Seabrook Station specific risk evaluation is consistent with the generic conclusions identified in NUREG-1493.

Based on the above evaluation, North Atlantic concludes that the proposed change to TS 6.15 does not constitute a significant hazard.

ENCLOSURE 2 TO NYN-01083

PRA Evaluation: Risk Impact of Extending the Frequency of Containment Integrated Leak Rate Testing from 10 Years to 16 Years

FILE COPY

By

Kenneth L. Kiper
Seabrook Station

September 28, 2001

Engineering Evaluation
EE-01-008, Rev.01

Prepared By	9-28-01 Date
Independent Reviewer	9/28/01 Date
NRMD Supervisor	9/28/01 Date
Regulatory Programs Manager	10/1/01 Date
Director of Nuclear Engineering	10/1/01 Date

1.0 Purpose

This evaluation addresses the impact on plant risk of extending Type A containment integrated leak rate testing (ILRT) from a 10-year interval to a 16-year interval.

Revision 1 added Attachment A which documents a sensitivity analysis to support the ILRT Technical Specification change.

2.0 Background

Three types of tests are used to assure containment leak-tight integrity:

- Type A, or integrated leak rate testing (ILRT), and
- Type B and C, or local leak rate testing (LLRT).

Local leak rate testing is performed on one penetration at a time and the impact on the overall leakage is the sum of individual penetrations' leakage. Integrated leak rate testing, on the other hand, is a global check of the containment isolation capability, conducted by pressurizing the containment to the peak DBA pressure (49.6 psig) and measuring the integrated impact of all leakage. The focus of this evaluation is on the frequency of ILRTs.

Technical Specification 6.15 sets the maximum allowed leakage (L_a)at 0.15% containment free volume by weight, per day at the peak DBA pressure. From EX1803.001, the procedural requirements for ILRT are an as-found value less than $1.0L_a$ and an as-left value of less than $0.75L_a$. The first three ILRTs performed at Seabrook Station have all been below $0.75L_a$.

Previous changes to the Appendix J of 10CFR Part 50 have allowed relaxation in the frequency of ILRT and LLRT testing, based on the performance of previous tests. Good performance of the Seabrook Unit 1 containment has allowed extension of the frequency for ILRT from 3 times in 10 years to once-in-10 years. This evaluation addresses the risk impact of further extending this frequency to once-in-16 years.

3.0 Evaluation

An extension to the ILRT frequency can impact risk by affecting the reliability of containment isolation due to unidentified leakage. It does not affect the Level 1 (core damage) risk and also does not impact the reliability of containment isolation valves failing to close on demand. Extending ILRT does increase the potential for unidentified containment leakage.

In general terms, ILRT-identified leakage can be grouped into three classes of containment isolation failure:

- Minor Containment Leakage (MCL) - leakage slightly above the TS leakage limit (L_a). This leakage is modeled as $2L_a$, i.e. two times allowable leakage.
- Small Containment Leakage (SCL) - significantly above the TS leakage limit but below the size that would qualify as large, early release (LERF). This leakage is modeled as $10L_a$, i.e. an order of magnitude above allowable leakage.
- Large Containment Leakage (LCL) - leakage that would qualify as LERF. This leakage is modeled as equivalent to the opening of the containment online purge line (8-inch nominal).

Risk can be decomposed into the *frequency* of unidentified leakage and the *consequences* of containment leakage. Extending ILRT has the potential to impact the *frequency* of containment leakage, but doesn't impact the *conditional consequences*. Thus, this evaluation first considers the impact on the frequency of leakage due to changing the ILRT interval to 16 years. Second, the consequences of minor, small, and large leakage are evaluated. Finally, the change in risk is calculated based on multiplying the change in frequency times the conditional consequences.

Note: the failure being evaluated is *not* failure of ILRT -- i.e., failure of the test to identify real leakage -- but failure of containment isolation that ILRT could uniquely identify. Due to the integral nature of the test, it is unlikely that leakage could be hidden from the test unless it was related to the isolation that is done to protect equipment and instrumentation. Failure of ILRT is not addressed quantitatively in this evaluation. This is conservative with regard to extending ILRT testing frequency because it would reduce the value of an ILRT.

3.1 Frequency

The accident sequences of interest are those core damage sequences with offsite releases through unidentified containment leakage -- leakage that could be identified through ILRT. These are core damage sequences where the containment is intact except for unidentified leakage - i.e., not gross containment failure, containment bypass, failure of active containment isolation, etc. Since the unidentified leak does not impact the likelihood or outcome of the core damage accident, the sequence frequency can be written as:

FREQ = Freq(Core damage with containment intact) x Prob(ILRT leak)

Where:

Freq(Core damage with containment intact) = Freq(release category S5) = 3.10E-5/yr (from Reference 1: SSPSS-1999a, Section 9.2), and

Prob(ILRT leak) = Prob(Unidentified containment leak detectable via ILRT). This probability is estimated in the following sections, for three different leakage sizes.

3.1.1 Minor Containment Leakage (MCL)

Baseline Probability

The probability of Minor Containment Leakage detectable from ILRT can be estimated from generic industry data. Section 4.1 of NUREG-1493 (Reference 2) discusses the results of approximately 180 ILRTs throughout the industry during the period 6/87 to 4/93. Of those 180 tests, 42 were classified as failures but only 5 were found by ILRT which LLRT could not and did not detect. The generic containment leakage probability of leakage that ILRT alone could identify:

PROB(MCL-ILRT1) = 5/180 = 0.0278

NUREG-1493 also states that:

> "Of note in the ILRT failures observed that were not detected by Type B and C testing, the actual leakage rates were very small, only marginally in excess of current leak-tightness requirements."

The leakage definition used for MCL ($2L_a$) is conservative compared to the above industry experience.

NUMARC conducted a similar survey of 144 ILRTs (also documented in NUREG-1493). This survey found 23 ILRT-related isolation failures but only 4 failures that ILRT alone could detect (code A1 and A3). This results in an identical failure rate (4/144 = 0.0278) as from the NUREG data. The 4 failures were all steam generator in-leakage, with as-found leakage of $0.88L_a$ to $1.3L_a$. At Seabrook, the integrity of secondary side leakage paths is verified by either a pressurization test of the SGs with the primary system depressurized or on-line with the plant systems examined when pressurized. Thus, the likelihood of SG manway gasket leakage is even more remote than indicated by generic data. No credit is taken for this Seabrook inspection.

In addition, 2 events in the NUMARC survey involved Type B & C leakage that was not discovered by LLRT (code A2). These events represent the failure of LLRT that ILRT could discover. These two events also involved leakage below $2L_a$. The probability of containment leakage identified by ILRT that LLRT failed to discover:

PROB(MCL-ILRT2) = 2/144 = 0.0139

Of the other 17 failure events in the NUMARC database, the leakages were less than $2L_a$ except for two events -- one less than $3L_a$ and a second approaching

$10L_a$. However, these involved exceedances due to additions from LLRT-identified leakage or testing errors. These events did not involve direct ILRT-identified failures.

These two probabilities can be summed to give an overall probability of containment leakage that was not detected by means other than ILRT. Thus, the probability of a minor containment leak that could be detected by ILRT:

PROB(MCL-ILRT) = 0.0278 + 0.0139 = 0.0417

These probabilities are based on industry events that involved small leakage, bounded by $2L_a$ -- consistent with the leakage definition of MCL.

Adjusted Probabilities

To evaluate the impact of the change in ILRT frequency on the probability of containment leakage, the failure probabilities calculated above need to be converted to a *failure rate per time.*

These failure events are associated with processes that can be seen as randomly generating leakage that could be detected by ILRT. For example, the SG secondary manway leakage could be present following the SG sludge lancing that occurs each refueling outage. Also, the Type B & C leakage not identified by LLRT could happen in any outage where the penetration seal is opened and reclosed. Thus, the processes that generate leakage can be thought of as a random process with a failure rate of λ_{ILRT}.

For minor containment leakage, the NUREG and NUMARC data are based on plant experience from 1993 and earlier, when the ILRT Technical Specifications required Type A testing 3 times in 10 years. Thus, the probability calculated above should be identified as:

PROB(MCL-ILRT, 3-in-10-year) = 0.0417

Then, if we assume a constant probability (0.0417) over this time, the failure rate per hr:

$\lambda_{ILRT,MCL}$ = 0.0417 / (10yr x 8760hr/yr / 3) = 1.43E-6/hr

Now, for a 10-year interval (the current requirement) and assuming a constant failure rate, the average failure probability is:

PROB(MCL-ILRT, 1-in-10-year) = 1.43E-6/hr x 10yr x 8760hr/yr = 0.125, or a factor of 3 increase (consistent with the factor of 3 increase in duration between ILRTs).

For a further increase to 16 years:

PROB(MCL-ILRT, 1-in-16-year) = 1.43E-6/hr x 16yr x 8760hr/yr = 0.200, a factor of 4.8 increase over the initial 3 tests in 10 years, or a factor of 1.6 increase over the once-in-10 year requirement.

3.1.2 Small Containment Leakage (SCL)

The NRC and NUMARC databases have no leakage events detected by ILRT (alone) that were above *minor* in size. Using the NUREG-1493 data with the evidence of 0 SCL failures, the χ^2 distribution can be used to provide a conservative estimate of the failure probability.

The containment failure process can be modeled as a binomial distribution. Then the 95% upper confidence limits can be approximated as:

$P_U(95\%) = \chi^2(\nu=2f+2; 0.95) / 2N$,

where f represents the number of SCLs, N represents the number of ILRTs in the database, ν represents the number of degrees of freedom, and $\chi^2(\nu;0.95)$ represents the chi-square probability with ν degrees of freedom at the 95% confidence level (Reference 3: NUREG/CR-2300, Section 5.5.1.3).

$f = 0$

$N = 180$

$\nu = 2$

$\chi^2(\nu=2;0.95) = 5.99$ (from Table C in Reference 6).

Thus, an upper limit on the probability of a small containment leakage that could be detected only by ILRT:

PROB(SCL-ILRT-95%) = 5.99 / (2*180) = 0.0166

A similar process can be used to calculate a 50% confidence upper limit probability:

$\chi^2(\nu=2;0.50) = 1.39$

PROB(SCL-ILRT-50%) = 1.39 / (2*180) = 0.00386

These values can be compared with the small pre-existing leakage basic event probability currently used in the Seabrook PRA (SSPSS-1999a):

> EE.CIPEL.GL = 3.74E-3, or a factor of 4 smaller than the 95% chi-square estimate but consistent with the 50% confidence value.

This basic event, documented in PLG-0631, Section 3.2.3.2 (Ref. 7), is based on a review of containment isolation data from NUREG/CR-4220. This data is pre-1985 and includes leakage that could be detected by LLRT as well as ILRT. It is expected that this probability is conservative since the reliability of containment isolation has likely improved over the decades and since this includes LLRT- as well as ILRT-identified leakage.

For this analysis, the conservative 95% confidence value will be used for the 3-in-10 year case. As discussed in Section 3.1.1, increasing the interval between ILRTs to 10 years and to 16 years increases the failure probability by factors of 3 and 4.8, respectively. Thus,

PROB(SCL-ILRT, 3-in-10-year) = 0.0166

PROB(SCL-ILRT, 1-in-10-year) = 0.0166 x 3.0 = 0.0498

PROB(SCL-ILRT, 1-in-16-year) = 0.0166 x 4.8 = 0.0797

3.1.3 Large Containment Leakage (LCL)

One would expect the probability of LCL to be much lower than SCL since it would require a defect that would likely be detected by other means - visual, leakage from other systems, etc. The Seabrook PRA has a value for large pre-existing leakage:

EE.C2PEL.GL = 9.34E-5, or a factor of 40 smaller than the small pre-existing leak probability above.

It is reasonable to assume the LCL probability would be at least an order of magnitude less than the SCL probability. Since the SCL probability is based on a conservative estimate, the factor of 40 will be used to estimate a probability for LCL:

PROB(LCL-ILRT) = 0.0166 / 40 = 4.15E-4

The probabilities for extended frequencies are modified as discussed in the previous section:

PROB(LCL-ILRT, 3-in-10-year) = 4.15E-4

PROB(LCL-ILRT, 1-in-10-year) = 4.15E-4 x 3.0 = 1.25E-3

PROB(LCL-ILRT, 1-in-16-year) = 4.15E-4 x 4.8 = 1.99E-3

3.1.4 Frequency Results

The following summarizes the probabilities for different ILRT frequencies:

	Probability of Unidentified Containment Leakage		
ILRT Frequency	**MCL**	**SCL**	**LCL**
3 per 10 years	0.0417	1.66E-2	4.15E-4
1 per 10 years	0.125	4.98E-2	1.25E-3
1 per 16 years	0.200	7.97E-2	1.99E-3

As discussed above, the frequency of core damage with intact containment, release category S5, is 3.10E-5. Thus, the frequency of core damage with unidentified leakage is:

	Frequency of Core Damage with Unidentified Containment Leakage		
ILRT Frequency	MCL	SCL	LCL
3 per 10 years	1.29E-6	5.15E-7	1.29E-8
1 per 10 years	3.88E-6	1.54E-6	3.86E-8
1 per 16 years	6.20E-6	2.47E-6	6.18E-8

Note, the frequency of LCL is approximately a factor of 100 below MCL. While this was coincidental, it is consistent with the data and experience that large containment leakage would be rare in comparison to minor leakage.

3.2 Consequence

The consequences for the three leakage sizes are derived from the Base Case Level 3 consequence model.

3.2.1 Base Case Model

Table 1 provides a summary of the Base Case risk results for the best estimate source term and consequence assumptions (from Reference 4: PLG-0432, Table D-5). This table presents the seven release category groups that have been used in the Seabrook PRA to bin the impact of containment performance - early vs late failure; large vs small leakage; structural failure vs isolation failure vs bypass failure.

The mean frequency values are based on specific release categories from SSPSS-1999a. Note, the sum of the release category frequencies is equal to the Core Damage Frequency total (4.63E-5/yr).

The Level 3 consequence analysis is based on Seabrook-specific site parameters, using the CRACIT computer code (documented in PLG-0432, Section 5 and Appendix D). Using the best estimate consequence modeling, there are no early fatalities projected on a conditional consequence basis. The health effects model for early fatalities has a threshold dose, below which no fatalities would occur. This is in contrast to the health effects for total cancers where a linear model with no threshold is used. Note that the Total Man-Rem and Total Cancer are related by the conversion 1 man-rem = 2.0E-4 cancers. As a result, these two columns give the same results, with regard to percentage change.

The absolute risk values are the produce of frequency times consequence. The total expected offsite exposure risk, the sum of the absolute risk from each release category, is 14.3 man-rem per year.

3.2.2 *ILRT Sensitivities*

Table 2 provides consequence and risk results for the three ILRT frequency cases - 3 in 10 years, 1 in 10 years, and 1 in 16 years. Each case includes the three containment leakage sizes - minor (MCL), small (SCL), and large (LCL).

The consequence model for the MCL size is based on the following:

- MCL = 2 x L_a (as discussed in Section 3.1),
- Seabrook value for L_a = 0.15% per day (based on TS 6.15),
- IntactS5 leakage = 0.10% per day (based on PLG-0432 assumption).

Thus, MCL / IntactS5 = (2 x 0.15%) / (0.10%) = 3, or MCL = 3 x intactS5. That is, the leakage from MCL is three times the intact containment category rather than two time, based on the calculation for "IntactS5" which used a leakage of 0.1%, rather than 0.15% (L_a).

Similarly, SCL / IntactS5 = (10 x 0.15%) / (.10%) = 15, or SCL = 15 x intactS5.

Based on Section 4.2 of EPRI TR-104285 (Reference 5), it is reasonable to assume a direct correlation of the population doses with release magnitudes for low fission product releases. Thus, for MCL and SCL, we assume the Conditional Consequences are directly proportional to the size of leak - factors of 3 and 15 larger than IntactS5.

As shown in Table 2, the LCL is modeled after release category "lerfS6." The large containment leakage size is modeled as equivalent to the opening of the containment online purge line, consistent with the definition of release category "lerfS6."

From Table 2, the consequence results for population dose can be summarized as follows:

ILRT Frequency	ILRT-Related Pop. Dose	Adjusted Total Pop. Dose	Percent of Adjusted Total	Change from 3 per 10 yr	Change from 1 per 10 yr
3 per 10 years	0.0128	14.31	0.09%	--	--
1 per 10 years	0.0385	14.34	0.27%	0.21%	--
1 per 16 years	0.0615	14.36	0.43%	0.35%	0.14%
BaseLine Total	--	14.3	--	--	--
	man-rem	man-rem			

Note, the BaseLine Total does not include an explicit contribution for ILRT-related consequences. As a result, an adjusted total population dose is calculated by adding the ILRT-related dose to the BaseLine total dose. In all cases, the ILRT-related dose is a very small percent of the total dose. Thus, the change in total population dose from extending the ILRT frequency is also very small. The change from the current frequency is only 0.14%. The cumulative change (from 3-in-10 yr to 1-in-16 yr) is only 0.35% increase.

3.2.3 Conservative Source Term / Consequence Sensitivity

Table 3 provides similar results using conservative source term and consequence assumptions (also from PLG-0432 Table D-5). PLG-0432 Section 5 explains the differences in assumptions between best estimate and conservative. With conservative assumptions, the conditional consequences are significantly greater, including a non-zero early fatality risk. The integrated risk results for the Conservative BaseLine case:

Early fatality risk = 6.05E-7/yr

Total man-rem risk = 36.7 man-rem / yr

Table 4 provides consequence and risk results for the three ILRT frequency cases - 3 in 10 years, 1 in 10 years, and 1 in 16 years - using the Conservative BaseLine model. The results for population dose are summarized below:

ILRT Frequency	ILRT-Related Pop. Dose	Adjusted Total Pop. Dose	Percent of Adjusted Total	Change from 3 per 10 yr	Change from 1 per 10 yr
3 per 10 years	0.156	36.9	0.42%	--	--
1 per 10 years	0.468	37.2	1.26%	0.81%	--
1 per 16 years	0.749	37.5	2.00%	1.62%	0.81%
BaseLine Total	--	36.7	--	--	--
	man-rem	man-rem			

Thus, for population dose, even with conservative consequence assumptions, the conclusion is still strong - that a change in ILRT frequency up to 1-in-16 year makes a small change in overall population dose risk.

The results for early fatality risk are summarized below:

ILRT Frequency	ILRT-Related Early Fatality Risk	Adjusted Total Early Fatality Risk	Percent of Adjusted Total	Change from 3 per 10 yr	Change from 1 per 10 yr
3 per 10 years	1.18E-7	7.24E-7	16.4%	--	--
1 per 10 years	3.55E-7	9.60E-7	37.0%	32.6%	--
1 per 16 years	5.68E-7	1.17E-6	48.4%	61.6%	21.9%
BaseLine Total	--	6.05E-7	--	--	--

For early fatality risk, using conservative modeling assumptions, the change is more significant (than for population dose). This is not surprising because the early fatality risk is very small; conservative assumptions related to source terms and consequence modeling have a compounding effect. In fact, if these two areas of conservatism are included separately, the early fatality risk decreases more than 2 orders of magnitude (PLG-0432, Table D-5, cases S6B-H and S6C-M). At that point, the proposed change in ILRT frequency would have an insignificant impact on the calculated risk.

3.2.4 Large Early Release Frequency

The large early release frequency (LERF) is impacted only by Large Containment Leakage (LCL). The change in ILRT-related LERF, from Table 2, is as follows:

ILRT Frequency	ILRT-Related LERF (LCL)	Change from 3 per 10 yr	Change from 1 per 10 yr
3 per 10 years	1.29E-8	--	--
1 per 10 years	3.86E-8	2.57 E-8	--
1 per 16 years	6.18E-8	4.89 E-8	2.32E-8
BaseLine LERF Total	--	--	--

Thus, the ΔLERF from current 1-in-10 year to 1-in-16 year frequency is 2.3E-8/yr. The cumulative ΔLERF (from 3-in-10 year to 1-in-16 year) is 4.89E-8/yr. These ΔLERF values are both below the Reg Guide 1.174 guideline of 1E-7 for "Very Small Changes".

3.3 Qualitative Risk Considerations

Section 3.1 and 3.2 estimated a small potential increase in risk based on extending the frequency of ILRT. There are other considerations that are difficult to quantify but provide some potential for risk reduction with extending the ILRT frequency:

- Shortened outages. The ILRTs at Seabrook Station have taken 4 to 5 days of critical path time during refueling outages. Fewer ILRTs means shorter outages and less outage risk.
- Reduced potential for damaged equipment not discovered. Due to the internal pressure in the containment during the test, equipment has been damaged in past tests. While this is primarily a maintenance cleanup and repair issue, it does have the potential for damage that is not detected following the test.
- Reduced potential for misalignment/latent errors. In preparation for an ILRT, a list of instrumentation and equipment are isolated to assure they are not damaged from the internal containment pressure. The

restoration form (Form R in EX1803.001) has a list of 47 pages of components and instrumentation that need to be modified following the test. While the restoration procedure provides significant assurance, there is the possibility of instrument or equipment being isolated or otherwise misaligned.

- Reduced personnel exposure - preparation for and recovery from an ILRT requires a significant number of activities within the containment.
- Reduced time when the containment is inaccessible. If a shutdown sequence occurred, local action in containment would not be possible for an extended period of time. For example, locally gagging an RHR relief valve that opened inadvertently would not be possible during the ILRT.

4.0 Safety Significance

This evaluation addresses extending the frequency of the ILRT to once in 16 years. Any significant hazards will be evaluated as part of the license amendment.

5.0 Conclusion

A change in the ILRT frequency from 1-in-10 years to 1-in-16 years will have an extremely small change in population dose consequences (0.8%). Also, the change in LERF (2.3E-8/yr) is well below the Reg Guide 1.174 1E-7 guideline for very small changes.

This finding is consistent the findings of NUREG-1493, Section 10.1.2:

> Reducing the frequency of Type A tests (ILRTs) from the current three per 10 years to one per 20 years was found to lead to an imperceptible increase in risk. The estimated increase in risk is very small because ILRTs identify only a few potential containment leakage paths that cannot be identified by Type B and C testing, and the leaks that have been found by Type A tests have been only marginally above existing requirements.

6.0 References

1. SSPSS-1999a, "Seabrook Station Probabilistic Safety Study, 1999a Update," January 2001.

2. NUREG-1493, "Performance-Based Containment Leak-Test Program," September 1995.

3. NUREG/CR-2300, "PRA Procedures Guide," January 1983.

4. PLG-0432, "Seabrook Station Risk Management and Emergency Planning Study," December 1985.

5. EPRI-104285, "Risk Impact Assessment of Revised Containment Leak Rate Testing Intervals," August 1994.

6. Statistical Data Analysis Handbook, Francis J. Wall, McGraw-Hill, 1986.

7. PLG-0631, "Probabilistic Risk Assessment of 40% Power operation at the Seabrook Station", November 1988.

TABLE 1 Risk Summary for Best Estimate Source Term/Consequence Modeling - Base Case *

Release Category Group	Description	Release Categories [a]	Frequency (per yr) [b]	Conditional Consequences [c]: Early Fatalities	Conditional Consequences [c]: Total Cancers	Conditional Consequences [c]: Total Man-Rem [d]	Absolute Risk (Freq x Conseq): Early Fatality Risk	Absolute Risk (Freq x Conseq): Total Cancer Risk	Absolute Risk (Freq x Conseq): Total Man-Rem Risk	CRACIT Case [e]
S1	Early containment failure	lerfS1A	1.05E-09	0.0	1230.4	6.15E+06	0.00E+00	1.29E-06	6.46E-03	S1B-M
S2	Early small containment leakage, late overpressure failure	serfS2A, serfS2B, serfS2R, serfS7S, serfS7V	2.97E-06	0.0	681.4	3.41E+06	0.00E+00	2.02E-03	1.01E+01	S2B-M
S3	Early intact, late overpressurization failure	lateS3A, lateS3B	1.23E-05	0.0	66.7	3.34E+05	0.00E+00	8.20E-04	4.10E+00	S3B-M
S4	Basemat melt-through	lateS4	1.06E-08	--	--	--	--	--	--	(f)
S5	Intact containment (TS Leakage)	intactS5	3.10E-05	0.0	0.1	5.00E+02	0.00E+00	3.10E-06	1.55E-02	S5HAT (g)
S6	Containment isolation failure	lerfS6	1.26E-08	0.0	109.2	5.46E+05	0.00E+00	1.38E-06	6.88E-03	S6B-M
S7	Containment bypassed	lerfS7I, lerfS7S, lerfS7V	3.74E-08	0.0	109.2	5.46E+05	0.00E+00	4.08E-06	2.04E-02	S7B-M
TOTAL			***4.63E-05***				***0.00E+00***	***2.85E-03***	***1.43E+01***	

Notes:

* Hand calculations in these tables may not exactly match the spreadsheet calculation because values displayed are rounded to three digits.

(a) Release Categories are from SSPSS-1999 Section 9.2. Note that "lerf" = large, early release frequency, "serf" = small, early release frequency, "late" = large, late release frequency, and "intact" = TS leakage frequency.

(b) The Frequency values are from the SSPSS-1999 Section 9.2, based on the Release Category designators in the previous column. Note that the frequency for "serfS7" is included in Group S2 frequency since this is the closest group with regard to consequences.

(c) Conditional Consequences come from PLG-0432 (Ref 4), Table D-5. These values are for 10-mile evacuation with best-estimate source term and best-estimate consequence modeling.

(d) Total Man-Rem and Total cancers are related by the equation: 2.0E-4 cancers = 1 man-rem (from PLG-0432, Table 5-1, Medium Case).

(e) The CRACIT cases are a series of consequence analyses documented in PLG-0432 Table D-5. The designator B = best estimate source terms (from PLG-0432, Table 4-13) and M =median consequence assumptions (from PLG-0432, Table 5-1).

(f) Category S4, basemat melt-through is combined with S3 since the consequences are similar and S4 has a low frequency relative to S3.

(g) S5HAT represents the conservative "intact" release, assuming a leakage of 0.1% per day with no credit for the enclosure building.

TABLE 2 Risk Summary for Best Estimate Source Term/Consequence Modeling - ILRT Sensitivities

				Conditional Consequences			*Absolute Risk (Freq x Conseq)*		
ILRT Release Category	**Description**	**Release Categories**	**Frequency (per yr)**	**Early Fatalities**	**Total Cancers**	**Total Man-Rem**	**Early Fatality Risk**	**Total Cancer Risk**	**Total Man-Rem Risk**
3 ILRTs per 10 Years									
MCL	Minor Containment Leakage (2La)	3 x intactS5	1.29E-06	0.0	0.3	1.50E+03	0.00E+00	3.88E-07	1.94E-03
SCL	Small Containment Leakage (10La)	15 x intactS5	5.15E-07	0.0	1.5	7.50E+03	0.00E+00	7.72E-07	3.86E-03
LCL	Large Containment Leakage	lerfS6	1.29E-08	0.0	109.2	5.46E+05	0.00E+00	1.40E-06	7.02E-03
						Subtotal (MCL, SCL, LCL) =	0.00E+00	2.56E-06	1.28E-02
						Baseline Total (from Table 1) =	0.00E+00	2.85E-03	1.43E+01
						Adjusted Total (Subtotal + Baseline Total) =	***0.00E+00***	***2.86E-03***	***1.43E+01***
						Percentage of Total =	0.0%	0.09%	0.09%
1 ILRT per 10 Years									
MCL	Minor Containment Leakage (2La)	3 x intactS5	3.88E-06	0.0	0.3	1.50E+03	0.00E+00	1.16E-06	5.81E-03
SCL	Small Containment Leakage (10La)	15 x intactS5	1.54E-06	0.0	1.5	7.50E+03	0.00E+00	2.32E-06	1.16E-02
LCL	Large Containment Leakage	lerfS6	3.86E-08	0.0	109.2	5.46E+05	0.00E+00	4.21E-06	2.11E-02
						Subtotal (MCL, SCL, LCL) =	0.00E+00	7.69E-06	3.85E-02
						Baseline Total (from Table 1) =	0.00E+00	2.85E-03	1.43E+01
						Adjusted Total (Subtotal + Baseline Total) =	***0.00E+00***	***2.86E-03***	***1.43E+01***
						Percentage of Total =	0.0%	0.27%	0.27%
1 ILRT per 16 Years									
MCL	Minor Containment Leakage (2La)	3 x intactS5	6.20E-06	0.0	0.3	1.50E+03	0.00E+00	1.86E-06	9.30E-03
SCL	Small Containment Leakage (10La)	15 x intactS5	2.47E-06	0.0	1.5	7.50E+03	0.00E+00	3.71E-06	1.85E-02
LCL	Large Containment Leakage	lerfS6	6.18E-08	0.0	109.2	5.46E+05	0.00E+00	6.74E-06	3.37E-02
						Subtotal (MCL, SCL, LCL) =	0.00E+00	1.23E-05	6.15E-02
						Baseline Total (from Table 1) =	0.00E+00	2.85E-03	1.43E+01
						Adjusted Total (Subtotal + Baseline Total) =	***0.00E+00***	***2.87E-03***	***1.43E+01***
						Percentage of Total =	0.0%	0.43%	0.43%

TABLE 3 Risk Summary for Conservative Source Term/Consequence Modeling - Conservative Base Case*

Release Category Group	Description	Release Categories [(a)]	Frequency (per yr) [(b)]	*Conditional Consequences* [(c)] Early Fatalities	Total Cancers	Total Man-Rem [(d)]	*Absolute Risk (Freq x Conseq)* Early Fatality Risk	Total Cancer Risk	Total Man-Rem Risk	CRACIT Case [(e)]
S1	Early containment failure	lerfS1A	1.05E-09	127.7	8047.1	1.61E+07	1.34E-07	8.45E-06	1.69E-02	S1C-H
S2	Early small containment leakage, late overpressure failure	serfS2A, serfS2B, serfS2R, serfS7S, serfS7V	2.97E-06	0.0	3964.5	7.93E+06	0.00E+00	1.18E-02	2.35E+01	S2C-H
S3	Early intact, late overpressurization failure	lateS3A, lateS3B	1.23E-05	0.0	510.1	1.02E+06	0.00E+00	6.27E-03	1.25E+01	S3C-H
S4	Basemat melt-through	lateS4	1.06E-08	--	--	--	--	--	--	(f)
S5	Intact containment (TS Leakage)	intactS5	3.10E-05	0.0	0.1	2.00E+02	0.00E+00	3.10E-06	6.20E-03	S5HAT (g)
S6	Containment isolation failure	lerfS6	1.26E-08	9.2	5972.7	1.19E+07	1.16E-07	7.53E-05	1.51E-01	S6C-H
S7	Containment bypassed	lerfS7I, lerfS7S, lerfS7V	3.74E-08	9.5	5933.9	1.19E+07	3.55E-07	2.22E-04	4.44E-01	S7C-H
TOTAL			***4.63E-05***				***6.05E-07***	***1.84E-02***	***3.67E+01***	

Notes:
* Hand calculations in these tables may not exactly match the spreadsheet calculation because values displayed are rounded to three digits.
(a) Release Categories are from SSPSS-1999 Section 9.2. Note that "lerf" = large, early release frequency, "serf" = small, early release frequency, "late" = large, late release frequency, and "intact" = TS leakage frequency.
(b) The Frequency values are from the SSPSS-1999 Section 9.2, based on the Release Category designators in the previous column. Note that the frequency for "serfS7" is included in Group S2 frequency since this is the closest group with regard to consequences.
(c) Conditional Consequences come from PLG-0432 (Ref 4), Table D-5. These values are for 10-mile evacuation with conservative source term and conservative consequence modeling.
(d) Total Man-Rem and Total cancers are related by the equation: 5.0E-4 cancers = 1 man-rem (from PLG-0432, Table 5-1, High Case).
(e) The CRACIT cases are a series of consequence analyses documented in PLG-0432 Table D-5. The designator C = conservative source terms (from PLG-0432, Table 4-13) and H =high consequence assumptions (from PLG-0432, Table 5-1).
(f) Category S4, basemat melt-through is combined with S3 since the consequences are similar and S4 has a low frequency relative to S3.
(g) S5HAT represents the conservative "intact" release, assuming a leakage of 0.1% per day with no credit for the enclosure building (no change from best-estimate model)

isk Summary for Conservative Source Term/Consequence Modeling - ILRT Sensitivities

Description	Release Categories	Frequency (per yr)	*Conditional Consequences* Early Fatalities	Total Cancers	Total Man-Rem	*Absolute Risk (Freq x Conseq)* Early Fatality Risk	Total Cancer Risk	Total Man-Rem Risk
) Years								
/inor Containment .eakage (2La)	3 x intactS5	1.29E-06	0.0	0.3	6.00E+02	0.00E+00	3.88E-07	7.76E-04
;mall Containment .eakage (10La)	15 x intactS5	5.15E-07	0.0	1.5	3.00E+03	0.00E+00	7.72E-07	1.54E-03
.arge Containment .eakage	lerfS6	1.29E-08	9.2	5972.7	1.19E+07	1.18E-07	7.68E-05	1.54E-01
Subtotal (MCL, SCL, LCL) =						1.18E-07	7.80E-05	1.56E-01
Baseline Total (from Table 3) =						6.05E-07	1.84E-02	3.67E+01
Adjusted Total (Subtotal + Baseline Total) =						***7.24E-07***	***1.84E-02***	***3.69E+01***
Percentage of Total =						16.36%	0.42%	0.42%
Years								
/inor Containment .eakage (2La)	3 x intactS5	3.88E-06	0.0	0.3	6.00E+02	0.00E+00	1.16E-06	2.33E-03
;mall Containment .eakage (10La)	15 x intactS5	1.54E-06	0.0	1.5	3.00E+03	0.00E+00	2.32E-06	4.63E-03
.arge Containment .eakage	lerfS6	3.86E-08	9.2	5972.7	1.19E+07	3.55E-07	2.31E-04	4.61E-01
Subtotal (MCL, SCL, LCL) =						3.55E-07	2.34E-04	4.68E-01
Baseline Total (from Table 3) =						6.05E-07	1.84E-02	3.67E+01
Adjusted Total (Subtotal + Baseline Total) =						***9.60E-07***	***1.86E-02***	***3.72E+01***
Percentage of Total =						36.97%	1.26%	1.26%
Years								
/inor Containment .eakage (2La)	3 x intactS5	6.20E-06	0.0	0.3	6.00E+02	0.00E+00	1.86E-06	3.72E-03
;mall Containment .eakage (10La)	15 x intactS5	2.47E-06	0.0	1.5	3.00E+03	0.00E+00	3.71E-06	7.41E-03
.arge Containment .eakage	lerfS6	6.18E-08	9.2	5972.7	1.19E+07	5.68E-07	3.69E-04	7.38E-01
Subtotal (MCL, SCL, LCL) =						5.68E-07	3.74E-04	7.49E-01
Baseline Total (from Table 3) =						6.05E-07	1.84E-02	3.67E+01
Adjusted Total (Subtotal + Baseline Total) =						***1.17E-06***	***1.87E-02***	***3.75E+01***
Percentage of Total =						48.42%	2.00%	2.00%

Attachment A Sensitivity Case

A.1 Introduction

This Sensitivity case follows a process employed in other submittals to NRC - a "standard" process - to address the impact on plant risk of extending Type A containment integrated leak rate testing (ILRT) from a 10-year interval to a 15-year (rather than 16-year) interval.

A.2 Evaluation

This Sensitivity case is documented in the spreadsheets presented as Tables A-1, A-2, and A-3. Table A-1 provides the sensitivity calculation for a test interval of 3-in-10 years. The definition of release "class" used in these tables is related to Release Category Groups used in Tables 1 to 4 of the Base case evaluation. The values for frequency and dose for most of the classes are taken directly from Table 1 (as indicated by italic terms in Table A-1) . The other values are discussed below.

Frequency

The Sensitivity case uses just two ILRT-failure classes (3a and 3b) while the Base case evaluation uses three - minor (MCL), small (SCL), and large (LCL).

The frequency values for Class 3a and Class 3b are calculated as a fraction of CDF Total. In the Sensitivity case for small leakage, the Class 3a fraction (0.064) is calculated using some of the same data used in the Baseline model (Section 3.1.1), 4 small failures in 144 tests. The Sensitivity case uses an upper bound estimate (95th percentile of a χ^2 distribution) rather than a best estimate value used in Section 3.1.1 for *Minor* leakage (0.0417). For *Small* leakage, the Baseline model (Section 3.1.2) uses 95th percentile of a χ^2 distribution with zero out of 180 tests to obtain a smaller value (0.0166).

In the Sensitivity for large leakage, the Class 3b fraction (0.021) is based on an upper bound estimate (95th percentile of a χ^2 distribution) based on zero events in 144 events. The Baseline model for *Large* leakage uses a value (4.15E-4) as documented in Section 3.1.3.

Consequence

The dose values for Class 3a and Class 3b are calculated as a factor of the intact containment dose (Class 1) -- 10L_a for Class 3a and 35L_a for Class 3b. The factors are based on assumptions in previous utilities' submittals. For the related release categories in the Base case model:

Dose(Minor Containment Leakage) = 2L_a

Dose(Small Containment Leakage) = $10L_a$

Dose(Large Containment Leakage) = Dose(Release Category S6)

Thus, the Small category matches up with the Class 3a. There is not an equivalent to Minor category in the Sensitivity evaluation. The Large category dose from S6 (5.46E5 man-rem) can be compared with the Class 3b dose, $35L_a$ (1.75E4 man-rem) - a factor of 30 higher.

To summarize the comparison between the Baseline model and Sensitivity model:

Leakage Size	Baseline Evaluation			Sensitivity Evaluation			Fractional Change	
	ID	FREQ Fraction of Intact	DOSE man-rem	ID	FREQ Fraction of CDF	DOSE man-rem	FREQ Fraction	DOSE man-rem
Minor	MCL	0.0417	1.50E3	n/a	n/a	n/a	n/a	n/a
Small	SCL	0.0166	7.50E3	Class 3a	0.064	5.00E3	3.9	0.67
Large	LCL	0.000415	5.46E5	Class 3b	0.021	1.75E4	50	0.03

Thus, the Base case is conservative in comparison to the Sensitivity case for *dose* but the Sensitivity is conservative with respect to *frequency*. The net result is that they can be considered equivalent within the range of uncertainty of the analysis. Note that the frequency fraction is used slightly differently between the two evaluations.

Impact of Testing Interval Change

The Base case evaluation uses factors of 3 (for 1 in 10 year) and 4.6 (for 1 in 15 year). These factors were based on the increase in time between tests assuming a linear increase in failure probability:

(3 tests/10 yr) / (1 test/10yr) = 3.0

(3 tests/10 yr) / (1 test/16yr) = 4.8

(Note, use of 15 years would have resulted in a factor of 4.5. The current Base case is slightly conservative compared to 15 years.)

The Sensitivity evaluation uses increase factors in the frequencies of Class 3a and Class 3b of 1.1 (for 1 in 10 year) and 1.15 (for 1 in 15 year) over the baseline (3 in 10 year). These use the addition data provided in NUREG-1493 that ILRTs only detect about 3% of leaks. Thus,

3 x 3% = 0.09 ~0.1, or 10% increase

4.5 x 3% = 0.15, or 15% increase

A.3 Conclusion

Results

The table below provides a summary of the results, comparing once with 3-in-10 year results and a second with 1-in-10 year results. The person-rem results can be compared with the Base case results in Section 3.2.2. The Sensitivity case shows smaller percentage change.

The Base case did not include a CCFP calculation, but the Sensitivity case shows very small change.

Class 3b results are provided since it is assumed that Class 3b release is a LERF and it is the only LERF contributor that would change with change in testing interval. The ΔLERF are comparable but slightly higher than the Base case results.

RESULTS	3-in-10 Year	1-in-10 Year	1-in-15 Year
Person-Rem per Year	14.3150	14.3180	14.3195
ΔPerson-Rem / Yr (from Baseline)		0.0030 (0.02%)	0.0045 (0.03%)
ΔPerson-Rem / Yr (from 1 in 10 Yr)			0.0015 (0.01%)
CCFP	0.3515	0.3536	0.3546
ΔCCFP (from Baseline)		0.0021 (0.6%)	0.0031 (0.9%)
ΔCCFP (from 1 in 10 Yr)			0.0010 (0.3%)
Class 3b Frequency	9.72E-7	1.07E-6	1.12E-6
ΔLERF (from Baseline)		9.8E-8	1.48E-7
ΔLERF (from 1 in 10 Yr)			5.0E-8

Comments on the Sensitivity Case

The Sensitivity case has several "issues" that limit its value as a best estimate risk tool. First, Class 3a (small leakage) frequency is based on actual failures (4 in 144) but the data indicates that all of the actual failures were less than $2L_a$ leakage. But the Sensitivity assumed a leakage of 10 La, mixing the data of minor leakage with small leakage (that the Base case model attempted to keep straight). In addition, the failure fraction for Class 3a is based on a 95th percentile upper bound calculation, which is NOT appropriate for best estimate results.

Second, Class 3b (large leakage) frequency is also based on a 95th percentile upper bound, using the evidence of zero events. The resulting fraction for Class 3b is only about 3 times less than Class 3a (small leakage). This doesn't seem to comport with reasonable judgment; the likelihood of a large leakage would be expected to be much lower than the type of minor leakage that has been detected. Large leakage is extremely unlikely to occur and, if it did occur, it is likely that large leakage would be detected from other plant indications. The Base case model makes an attempt at estimating the frequency of large leakage and provides another, existing value for comparison.

Third, the Sensitivity case uses a factor of 35 L_a, which corresponds to a leakage rate of 35 x 0.15% = 5% per day. However, NUREG-1493 (page 5-10) indicates that for a 3.6-inch diameter opening, the critical flow would be 200% per day. The Seabrook PRA uses 3-inch diameter as the cutoff between large and small containment failure. The value used in the Sensitivity case for Class 3b is way below what would be considered a LERF type release. Thus, the results for LERF in the Sensitivity case, which use the change in Class 3b, are extremely conservative. In reality, the Sensitivity case does not even evaluate a real LERF sequence.

Finally, the impact of changing testing intervals includes a factor of 3% in the Sensitivity case, based on limited discovery of leakage by ILRT. But discoverability is already in the estimation of the frequency of small and large leakage - it is specifically "failure of containment isolation that ILRT could uniquely identified" (from Section 3.0).

As a result of these issues, it is difficult to reach a meaningful conclusion from the Sensitivity case. In addition, the uncertainties, which are present in such an evaluation which relies on zero failures, would overwhelm the small changes that the numbers indicate.

ENCLOSURE 3 TO NYN-01083

Updated Determination of Significant Hazards Determination for LAR 01-05

IV. DETERMINATION OF SIGNIFICANT HAZARDS FOR PROPOSED CHANGES

LAR 01-05 proposes changes to the Seabrook Station Technical Specifications (TS) Index, TS 1.0 ("Definitions") and TS Table 1.2.

In developing NUREG-1431 ("Standard Technical Specifications, Westinghouse Plants"), the NRC, in conjunction with the Westinghouse Owners Group (WOG), has developed standard definitions. The purpose of LAR 01-05 is to adopt many of these definitions.

NUREG-1431, Rev. 2 contains the improved Standard Technical Specifications (STS) for Westinghouse plants. This revision incorporates the cumulative changes to Revision 1, which was published in April 1995. The changes reflected in Revision 2 resulted from the experience gained from license amendment applications to convert to these improved STS or to adopt partial improvements to existing technical specifications. NUREG-1431, Rev. 2 is the result of extensive public technical meetings and discussions among the Nuclear Regulatory Commission (NRC) staff and various nuclear power plant licensees, Nuclear Steam Supply System (NSSS) Owners Groups, and the Nuclear Energy Institute (NEI). The improved STS were developed based on the criteria in the Final Commission Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors, dated July 22, 1993 (58 FR 39132), which was subsequently codified by changes to Section 36 of Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR 50.36) (60 FR 36953).

The NRC has encouraged licensees to upgrade their technical specifications consistent with those criteria and conforming, to the practical extent, to NUREG-1431, Rev. 2. The NRC requests that licensees adopting portions of the improved STS to existing technical specifications should adopt all related requirements, as applicable, to achieve a high degree of standardization and consistency.

In accordance with 10 CFR 50.92, North Atlantic has concluded that the proposed changes do not involve a significant hazards consideration (SHC). The basis for the conclusion that the proposed changes do not involve a SHC is as follows:

1. *The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.*

   The proposed changes to TS Index, TS 1.0 and TS Table 1.2 are changes that do not change any structures, systems or components (SSCs) thus, the proposed change does not adversely affect accident initiators or precursors nor alter the design assumptions, conditions, and configuration of the facility. In addition, the proposed changes do not affect the manner in which the plant responds in normal operation, transient or accident conditions. The proposed changes do not alter or prevent the ability of SSCs to perform their intended function to mitigate the consequences of an initiating event within the acceptance limits assumed in the Updated Final Safety Analysis Report (UFSAR).

Finally, while these changes may afford North Atlantic operational flexibility, the changes are an enhancement and do not affect plant safety.

The proposed changes do not affect the source term, containment isolation or radiological release assumptions used in evaluating the radiological consequences of an accident previously evaluated in the Seabrook Station UFSAR. Further, the proposed changes do not increase the types and amounts of radioactive effluent that may be released offsite, nor significantly increase individual or cumulative occupational/public radiation exposures.

Therefore, it is concluded that these proposed revisions to TS Index, TS 1.0 and TS Table 1.2 do not involve a significant increase in the probability or consequence of an accident previously evaluated.

2. *The proposed changes do not create the possibility of a new or different kind of accident from any previously evaluated.*

This proposed changes to TS Index, TS 1.0 and TS Table 1.2 are changes that do not change the operation or the design basis of any plant system or component during normal or accident conditions. The proposed change incorporates definitions delineated in the improved Standard Technical Specifications (NUREG-1431). The proposed changes do not include any physical changes to the plant. In addition, the proposed changes do not change the function or operation of plant equipment or introduce any new failure mechanisms. The plant equipment will continue to respond per the design and analyses and there will not be a malfunction of a new or different type introduced by the proposed changes.

The proposed changes are administrative in nature and only correct, update and clarify the Seabrook Station Operating License to reflect the definitions in the improved Standard Technical Specifications. The proposed changes do not modify the facility nor do they affect the plant's response to normal, transient or accident conditions. The changes do not introduce a new mode of plant operation. While these changes may afford North Atlantic operational flexibility, the changes are an enhancement and do not affect plant safety. The plant's design and design basis are not revised and the current safety analyses remains in effect.

Thus, these proposed revisions to TS Index, TS 1.0 and TS Table 1.2 do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. *The proposed changes do not involve a significant reduction in the margin of safety.*

The proposed changes to TS Index, TS 1.0 and TS Table 1.2 are administrative in nature and only correct, update and clarify the Seabrook Station Operating License to reflect the improved Standard Technical Specifications. While these changes may afford North Atlantic operational flexibility, the changes are an enhancement and do not affect plant safety. The safety margins established through Limiting Conditions for Operation, Limiting Safety System Settings and Safety Limits as specified in the Technical Specifications are not revised nor is the plant design revised by the proposed changes.

Thus, it is concluded that these proposed revisions to TS Index, TS 1.0 and TS Table 1.2 do not involve a significant reduction in a margin of safety.

Based on the above evaluation, North Atlantic concludes that the proposed changes to TS Index, TS 1.0 and TS Table 1.2 do not constitute a significant hazard.