II. Markup of Proposed Change

See attached markup of proposed changes to Technical Specifications.

9304150086 930408
PDR ADOCK 05000443
P PDR

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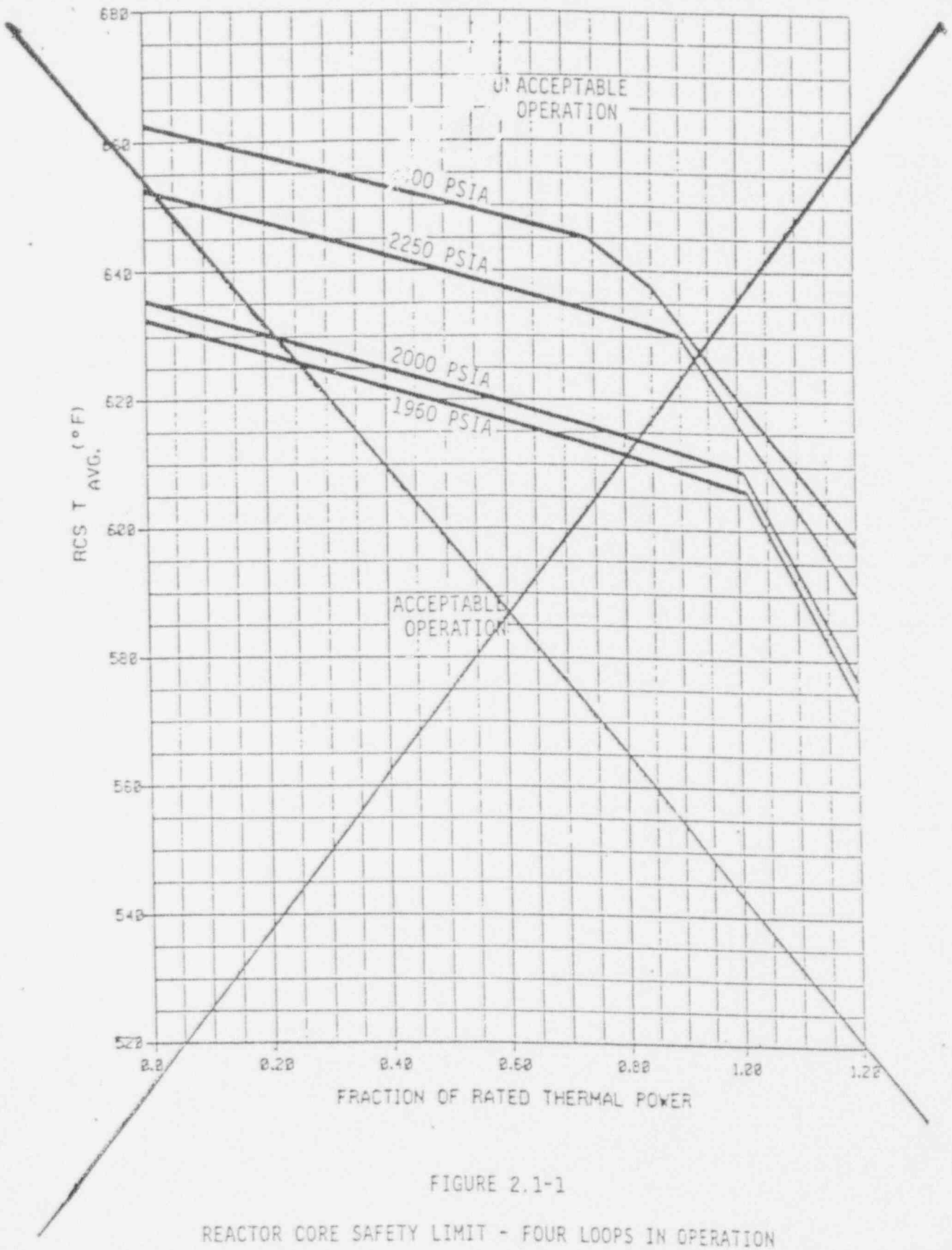
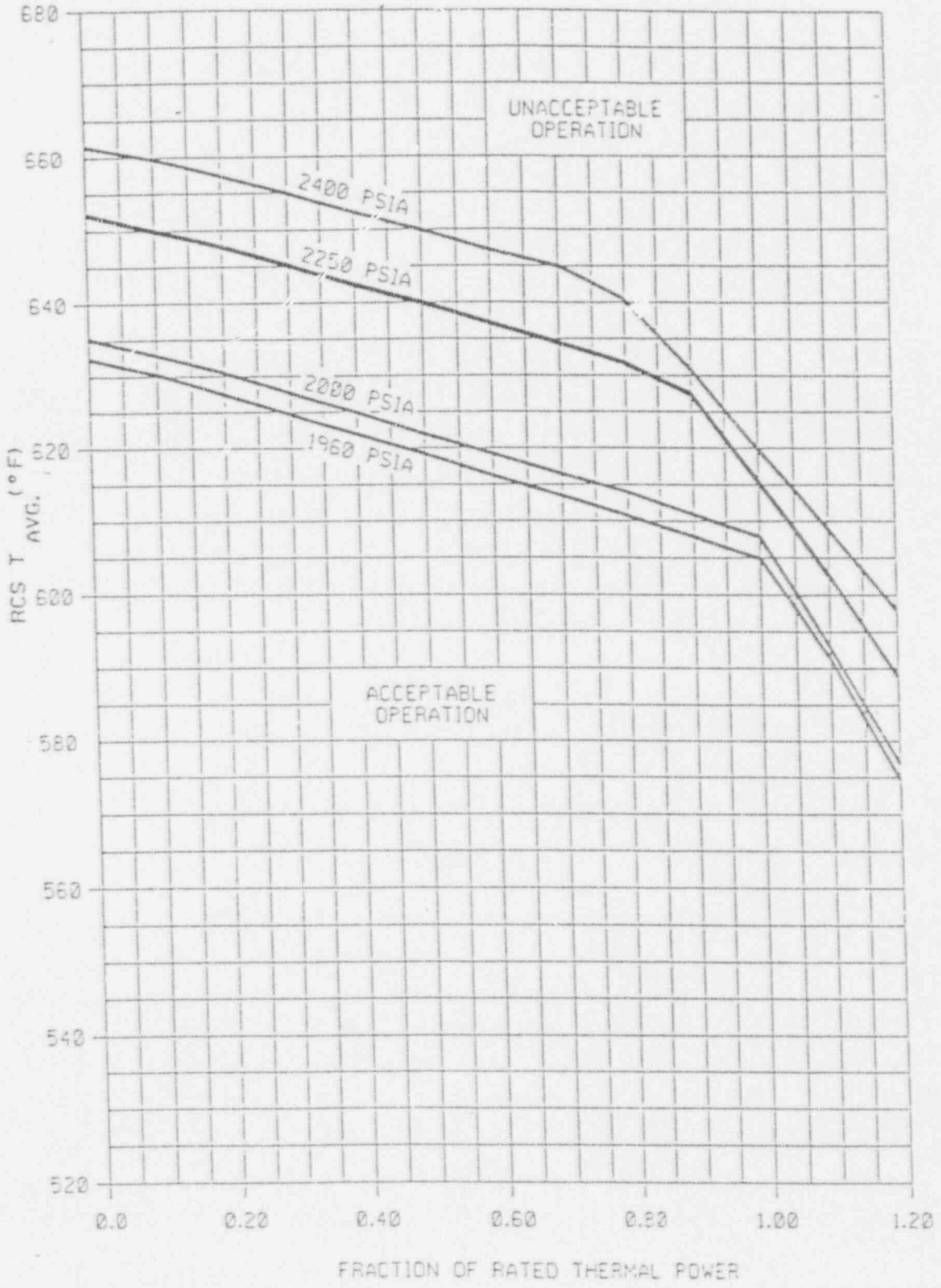


FIGURE 2.1-1

REACTOR CORE SAFETY LIMIT - FOUR LOOPS IN OPERATION

INSERT I


680
660
640
620
600
580
560
540
520
UNACCEPTABLE OPERATION
2400 PSIA
2250 PSIA
2000 PSIA
1960 PSIA
ACCEPTABLE OPERATION
RCS T AVG. (°F)
0.0
0.20
0.40
0.60
0.80
1.00
1.20
FRACTION OF RATED THERMAL POWER

III. Retype of Proposed Change

See attached retype of proposed changes to Technical Specifications. The attached retype reflects the currently issued version of Technical Specifications. Pending Technical Specification changes or Technical Specification changes issued subsequent to this submittal are not reflected in the enclosed retype. The enclosed retype should be checked for continuity with Technical Specifications prior to issuance.

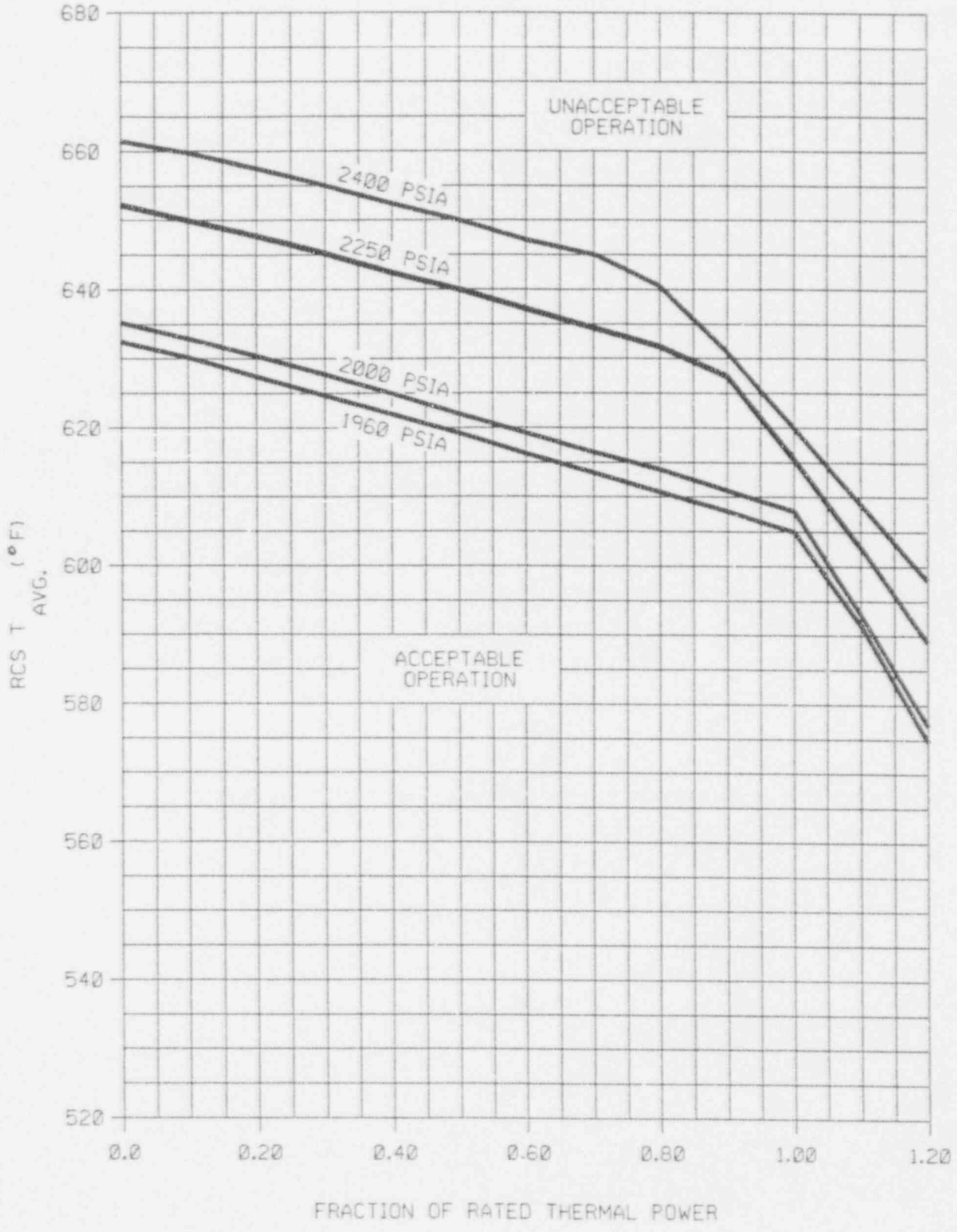


FIGURE 2.1-1

REACTOR CORE SAFETY LIMIT - FOUR LOOPS IN OPERATION

IV. Safety Evaluation of License Amendment Request 93-03 Proposed Change

Seabrook Station Licensee Event Report (LER) 92-02-01 reported that the curves of Technical Specification Figure 2.1-1, Reactor Core Safety Limit - Four Loops in Operation, were non-conservative. The non-conservative curves were identified as a result of a North Atlantic review of the Technical Specification values provided to North Atlantic by Westinghouse. It was determined, through a comparison of Westinghouse design documents to the actual curves in Figure 2.1-1, that the curves in the region of 80% to 110% of rated thermal power (RTP) do not accurately represent the loci of points upon which the curves are based. For example, the 1960 psia curve at 100% of RTP should provide a value of 605.0°F, while the actual curve in Figure 2.1-1 is closer to 606.5°F. There are other points in this region that can be determined to be non-conservative when compared to the loci of points.

North Atlantic determined that the non-conservative curves did not constitute a safety hazard because plant operation in the affected area would not have occurred for two reasons. First, normal operation of the plant at power is controlled by Station operating procedures which specify the normal operating band for both Reactor Coolant System (RCS) temperature and pressure. The normal operating pressure is 2235 psig and the Station procedures require that the RCS pressure be maintained between 2205 and 2265 psig. The RCS temperature is maintained within ±4°F of the Tavg program and the normal RCS temperature per the T_{avg} program at 100% of RTP is 587°F. The second reason is related to the Reactor Protection System (RPS) reactor trips which are designed to prevent the safety limits from being challenged. These RPS trips are the Overtemperature ΔT trip, Overpower ΔT trip and the Power Range Neutron Flux High trip. These RPS trips are developed using the criteria of Technical Specification 2.2.1, Reactor Trip System Instrumentation Setpoints, and do not utilize the values of the curves in Figure 2.1-1. These RPS trips have not been challenged or exceeded at Seabrook Station and therefore the safety limit as provided in Figure 2.1-1 has not been challenged.

The curves of Figure 2.1-1 show the loci of points of Rated Thermal Power (RTP), Reactor Coolant System (RCS) pressure and average RCS temperature (Tavg) for which the minimum Departure from Nucleate Boiling Ratio (DNBR) is no less than 1.30, or the average enthalpy at the reactor vessel exit is equal to the enthalpy of saturated liquid. The safety limit ensures that the integrity of the fuel is not challenged.

The revision to the curves to accurately reflect the loci of points upon which the curves are based will ensure that if the Reactor Protection System trip functions, as discussed above, are exceeded the evaluations made to verify if a safety limit has been exceeded will be accurate. A review of the Seabrook Station Technical Specifications Bases and Updated Final Safety Analysis Report Sections 4 and 15 verifies that the proposed change does not alter the design, function or operation of the plant. This proposed change does not affect any existing accident analyses, and it does not introduce the possibility of any accidents or malfunctions not already analyzed. Since the proposed change is providing the more conservative values for Figure 2.1-1 to reflect the design basis it does not reduce the margin of safety as defined in the bases of the Technical Specifications and preserves the margin originally established. The revision to the curves will not affect any methods of operating. This revision ensures that the design basis and the safety limits are accurately and appropriately reflected in the Technical Specifications and will ensure

that a minimum DNBR of not less than 1.30 is achieved, thus ensuring that there will be at least a 95 percent probability that departure from nucleate boiling will not occur on the limiting fuel rods during normal operation, operational transients and any transient conditions arising from faults of moderate frequency (Condition I and II occurrences), at a 95 percent confidence level.

This condition was reported to the NRC in Licensee Event Report 92-02-01. One of the corrective actions specified in LER 92-02-01 was to revise Technical Specification Figure 2.1-1 to include curves which accurately reflect the loci of points upon which they are based. This submittal addresses that corrective action.

V. Determination of Significant Hazards for License Amendment Request 93-03

(1) The proposed change does not involve a significant increase in the probability or consequences of an accident previously analyzed.

The curves of Figure 2.1-1 show the loci of points of Rated Thermal Power (RTP), Reactor Coolant System (RCS) pressure and average RCS temperature (Tavg) for which the minimum Departure from Nucleate Boiling Ratio (DNBR) is no less than 1.30, or the average enthalpy at the reactor vessel exit is equal to the enthalpy of saturated liquid. The safety limit ensures that the integrity of the fuel is not challenged.

The non-conservative curves did not constitute a safety hazard because plant operation in the affected area would not have occurred for two reasons. First, normal operation of the plant at power is controlled by Station operating procedures which specify the normal operating band for both Reactor Coolant System (RCS) temperature and pressure. The normal operating pressure is 2235 psig and the Station procedures require that the RCS pressure be maintained between 2205 and 2265 psig. The RCS temperature is maintained within $\pm 4°F$ of the Tavg program and the normal RCS temperature per the T_{avg} program at 100% of RTP is 587°F. The second reason is related to the Reactor Protection System (RPS) reactor trips which are designed to prevent the safety limits from being challenged. These RPS trips are the Overtemperature ΔT trip, Overpower ΔT trip and the Power Range Neutron Flux High trip. These RPS trips are developed using the criteria of Technical Specification 2.2.1, Reactor Trip System Instrumentation Setpoints, and do not utilize the values of the curves in Figure 2.1-1. These RPS trips have not been challenged or exceeded at Seabrook Station and therefore the safety limit as provided in Figure 2.1-1 has not been challenged.

The revision to the curves to accurately reflect the loci of points upon which the curves are based will ensure that if the Reactor Protection System trip functions, as discussed above (Overtemperature ΔT, Overpower ΔT and Power Range Neutron Flux High) are exceeded, the appropriate evaluations will be made to verify if a safety limit was exceeded. A review of the Seabrook Station Technical Specification Bases and Updated Final Safety Analysis Report Sections 4 and 15 verifies that the proposed change does not alter the design, function or operation of the plant. This proposed change does not affect any existing accident analyses, and it does not introduce the possibility of any accidents or malfunctions not already analyzed. Since the proposed change is providing the more conservative values for Figure 2.1-1 to reflect the design basis it does not reduce the margin of safety as defined in the Bases of the Technical Specifications and preserves the margin originally established. The revision to the curves will not affect any methods of operating the plant. This revision ensures that the design basis and the safety limits are accurately and appropriately reflected in the Technical Specifications and will ensure that the minimum DNBR is no less than 1.30, thus ensuring that there will be at least a 95 percent probability that departure from nucleate boiling will not occur on the limiting fuel rods during normal operation, operational transients and any transient conditions arising from faults of moderate frequency (Condition I and II occurrences), at a 95 percent confidence level.

Therefore, this proposed change does not increase the probability of an accident previously evaluated nor will it increase the consequences of any accident.

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

The proposed change to Technical Specification Figure 2.1-1 does not affect the design, function or operation of any Seabrook Station structures, systems or components. The curves of Figure 2.1-1 show the loci of points of Rated Thermal Power (RTP), Reactor Coolant System (RCS) pressure and average RCS temperature (Tavg) for which the minimum Departure from Nucleate Boiling Ratio (DNBR) is no less than 1.30, or the average enthalpy at the reactor vessel exit is equal to the enthalpy of saturated liquid. The safety limits ensure that the integrity of the fuel is not challenged. There are no new failure modes introduced by this proposed change. Its intent is to correct an error in the existing Technical Specifications whereby inaccurate curves were provided in Figure 2.1-1. The correction of these curves will ensure that the design is accurately reflected and that the plant is operated in accordance with the design basis.

Therefore, the possibility of a new or different kind of accident is not created by this proposed change.

(3) The proposed change does not result in a significant reduction in the margin of safety.

The Technical Specification Bases state that the safety limit restriction prevents the overheating of the fuel and possible cladding perforation that would result in the release of fission products to the reactor coolant. This protection is provided by restricting fuel operation to within the nucleate boiling region where the heat transfer coefficient is large and the cladding surface temperature is slightly above the coolant saturation temperature. The curves of Figure 2.1-1 show the loci of points of Rated Thermal Power (RTP), Reactor Coolant System (RCS) pressure and average RCS temperature (Tavg) for which the minimum Departure from Nucleate Boiling Ratio (DNBR) is no less than 1.30, or the average enthalpy at the reactor vessel exit is equal to the enthalpy of saturated liquid. The safety limit ensures that the integrity of the fuel is not challenged.

The correction of the curves in Figure 2.1-1 does not decrease the margin of safety as described in the Bases of the Technical Specifications, but rather ensures that the margin of safety as presented in the Bases and established by the design basis is maintained.

VI. Environmental Impact Assessment

North Atlantic has reviewed the proposed license amendment against the criteria of 10CFR51.22 for environmental considerations. The proposed changes do not involve a significant hazards consideration, nor increase the types and amounts of effluents that may be released offsite, nor significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, North Atlantic concludes that the proposed change meets the criteria delineated in 10CFR51.22(c)(9) for a categorical exclusion from the requirements for an Environmental Impact Statement.

VII. Supporting Information

The loci of points used to generate the revised curves for Technical Specification Figure 2.1-1, Reactor Core Safety Limit - Four Loops in Operation, is enclosed.

LOCI OF POINTS TO GENERATE THE REVISED CURVES FOR TECHNICAL SPECIFICATION FIGURE 2.1-1

PRESSURE - 1960 psia

POINT	POWER	TAVG
1	1.20	574.73
2	1.18	578.08
3	1.16	581.43
4	1.14	584.77
5	1.12	588.11
6	1.10	591.43
7	1.08	594.75
8	1.06	598.06
9	1.04	601.17
10	1.02	603.78
11	1.00	605.00
12	.98	605.57
13	.96	606.14
14	.94	606.71
15	.92	607.27
16	.90	607.84
17	.88	608.41
18	.86	608.98
19	.84	609.55
20	.82	610.12
21	.80	610.69
22	.78	611.25
23	.76	611.82
24	.74	612.39
25	.72	612.95
26	.70	613.52
27	.68	614.09
28	.66	614.65
29	.64	615.22
30	.62	615.78
31	.60	616.35
32	.58	616.91
33	.56	617.48
34	.54	618.04
35	.52	618.60
36	.50	619.16
37	.48	619.73
38	.46	620.29
39	.44	620.85
40	.42	621.41
41	.40	621.97
42	.38	622.52
43	.36	623.08
44	.34	623.64
45	.32	624.19
46	.30	624.75
47	.28	625.30
48	.26	625.86
49	.24	626.41
50	.22	626.96
51	.20	627.51
52	.18	628.06
53	.16	628.61
54	.14	629.16
55	.12	629.70
56	.10	630.25
57	.08	630.79
58	.06	631.33
59	.04	631.87
60	.02	632.41

LOCI OF POINTS TO GENERATE THE REVISED CURVES
FOR TECHNICAL SPECIFICATION FIGURE 2.1-1

PRESSSURE- 2000 psia

POINT	POWER	TAVG
1	1.20	576.96
2	1.18	580.24
3	1.16	583.51
4	1.14	586.78
5	1.12	590.03
6	1.10	593.28
7	1.08	596.53
8	1.06	599.76
9	1.04	602.99
10	1.02	606.20
11	1.00	608.06
12	.98	608.63
13	.96	609.20
14	.94	609.76
15	.92	610.33
16	.90	610.90
17	.88	611.46
18	.86	612.03
19	.84	612.59
20	.82	613.16
21	.80	613.72
22	.78	614.29
23	.76	614.85
24	.74	615.42
25	.72	615.98
26	.70	616.54
27	.68	617.11
28	.66	617.67
29	.64	618.23
30	.62	618.79
31	.60	619.35
32	.58	619.91
33	.56	620.47
34	.54	621.03
35	.52	621.59
36	.50	622.15
37	.48	622.71
38	.46	623.27
39	.44	623.82
40	.42	624.38
41	.40	624.93
42	.38	625.49
43	.36	626.04
44	.34	626.59
45	.32	627.14
46	.30	627.69
47	.28	628.24
48	.26	628.79
49	.24	629.34
50	.22	629.89
51	.20	630.43
52	.18	630.98
53	.16	631.52
54	.14	632.06
55	.12	632.60
56	.10	633.14
57	.08	633.67
58	.06	634.21
59	.04	634.74
60	.02	635.27

LOCI OF POINTS TO GENERATE THE REVISED CURVES
FOR TECHNICAL SPECIFICATION FIGURE 2.1-1

PRESSURE - 2250 psia

POINT	POWER	TAVG
1	1.20	589.71
2	1.18	592.32
3	1.16	594.93
4	1.14	597.54
5	1.12	600.14
6	1.10	602.74
7	1.08	605.33
8	1.06	607.92
9	1.04	610.51
10	1.02	613.09
11	1.00	615.66
12	.98	618.23
13	.96	620.79
14	.94	623.35
15	.92	625.89
16	.90	627.66
17	.88	628.87
18	.86	630.08
19	.84	630.80
20	.82	631.35
21	.80	631.89
22	.78	632.43
23	.76	632.97
24	.74	633.52
25	.72	634.06
26	.70	634.60
27	.68	635.14
28	.66	635.68
29	.64	636.21
30	.62	636.75
31	.60	637.29
32	.58	637.82
33	.56	638.36
34	.54	638.89
35	.52	639.42
36	.50	639.96
37	.48	640.49
38	.46	641.02
39	.44	641.54
40	.42	642.07
41	.40	642.60
42	.38	643.12
43	.36	643.64
44	.34	644.16
45	.32	644.68
46	.30	645.20
47	.28	645.72
48	.26	646.23
49	.24	646.74
50	.22	647.25
51	.20	647.76
52	.18	648.27
53	.16	648.77
54	.14	649.27
55	.12	649.77
56	.10	650.27
57	.08	650.76
58	.06	651.25
59	.04	651.74
60	.02	652.22

LOCI OF POINTS TO GENERATE THE REVISED CURVES FOR TECHNICAL SPECIFICATION FIGURE 2.1-1

PRESSURE - 2400 psia

POINT	POWER	TAVG
1	1.20	597.59
2	1.18	599.86
3	1.16	602.13
4	1.14	604.39
5	1.12	606.66
6	1.10	608.92
7	1.08	611.17
8	1.06	613.43
9	1.04	615.68
10	1.02	617.93
11	1.00	620.17
12	.98	622.41
13	.96	624.65
14	.94	626.88
15	.92	629.11
16	.90	631.34
17	.88	633.44
18	.86	635.45
19	.84	637.45
20	.82	639.45
21	.80	640.67
22	.78	641.59
23	.76	642.51
24	.74	643.43
25	.72	644.31
26	.70	644.84
27	.68	645.36
28	.66	645.88
29	.64	646.40
30	.62	646.92
31	.60	647.44
32	.58	647.96
33	.56	648.48
34	.54	648.99
35	.52	649.51
36	.50	650.02
37	.48	650.53
38	.46	651.04
39	.44	651.55
40	.42	652.05
41	.40	652.56
42	.38	653.06
43	.36	653.56
44	.34	654.06
45	.32	654.56
46	.30	655.05
47	.28	655.54
48	.26	656.03
49	.24	656.52
50	.22	657.00
51	.20	657.48
52	.18	657.96
53	.16	658.44
54	.14	658.91
55	.12	659.38
56	.10	659.84
57	.08	660.30
58	.06	660.76
59	.04	661.21
60	.02	661.65