Maria Korsnick
Site Vice President

R.E. Ginna Nuclear Power Plant, LLC
1503 Lake Road
Ontario, New York 14519-9364
585.771.3494
585.771.3943 Fax
maria.korsnick@costellation.com

Constellation Energy
Generation Group

March 28, 2006

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: **R.E. Ginna Nuclear Power Plant**
Docket No. 50-244

License Amendment Request: Emergency Core Cooling System (ECCS) Accumulator Boron Concentration Verification Frequency

In accordance with the provisions of 10 CFR 50.90, R.E. Ginna Nuclear Power Plant, LLC (Ginna LLC) is submitting a request for an amendment to change the method for complying with the surveillance required by Technical Specification Surveillance Requirement 3.5.1.4.

Technical Specification Surveillance Requirement 3.5.1.4 requires that the boron concentration of ECCS Accumulators be verified every 31 days on a staggered test basis. Currently, that requirement is met by taking a sample from one of two ECCS Accumulators every 31 days. The proposed change would require leakage into the ECCS Accumulators to be monitored every twelve hours and a sample to be taken every six months. The samples would be taken to verify the inleakage observations remain conservative. Filling the ECCS Accumulators using the Refueling Water Storage Tank as the water source ensures the boron concentration will not be diluted during makeup operations.

Given the stability of the boron concentration in each tank since 2003 and the dose incurred taking the samples every 31 days, Ginna LLC believes it is appropriate to change the surveillance method as currently described in the Technical Specifications. In addition, sampling of the ECCS Accumulators requires a containment entry during power operation to draw the sample. Changing the method of boron concentration verification would save approximately 0.2 Rem per year.

1001519

A001

Both engineering analyses and risk insights were used to determine the acceptability of this proposed change. They are presented in Attachment (1). The engineering analysis provides results that show the predictability of the ECCS Accumulator boron concentration based on inleakage as compared with samples. In addition, the risk insights show that the likelihood of core damage resulting from extension of the boron concentration sampling is significantly below 1E-7. The large early release frequency impact is by evaluation, extremely small. Therefore, we find the proposed change acceptable.

We have considered the possibility of a significant hazard associated with this proposed change and have determined that there are none (see Attachment 1). We have also determined that operation with the proposed change would not result in any significant change in the types or amounts of any effluents that may be released offsite, nor would it result in any significant increase in individual or cumulative occupational radiation exposure. Therefore, the proposed change is eligible for categorical exclusion as set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment is needed in connection with the proposed amendment.

This proposed change to the Technical Specifications and our determination of significant hazards have been reviewed by our Plant Operation Review Committee (PORC) and Nuclear Safety Review Board (NSRB), and they have concluded that implementation of these changes will not result in an undue risk to the health and safety of the public.

We request that this change be approved by December 31, 2006. As noted above, continued sampling of the ECCS Accumulators on a 31-day staggered frequency is a substantial contributor to non-outage occupational exposure. Extending the sampling period is in keeping with the philosophy and practice of as low as reasonably achievable (ALARA) as noted in 10 CFR 20.1101. Therefore, the sooner that this proposed change is approved, the sooner we will be able to curtail the associated occupational exposure.

Should you have questions regarding the information in this submittal, please contact Mr. Robert Randall at (585) 771-3734 or Robert.Randall@constellation.com.

Very truly yours,

Mary G. Korsnick

STATE OF NEW YORK :
: **TO WIT:**
COUNTY OF WAYNE :

I, Mary G. Korsnick, begin duly sworn, state that I am Vice President, R.E. Ginna Nuclear Power Plant, LLC (Ginna LLC), and that I am duly authorized to execute and file this request on behalf of Ginna LLC. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other Ginna LLC employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.

Mary G. Korsnick

Subscribed and sworn before me, a Notary Public in and for the State of New York and County of Monroe, this 28 day of March, 2006.

WITNESS my Hand and Notarial Seal:

Sharon L Miller
Notary Public

My Commission Expires: 12-21-06
Date

SHARON L. MILLER
Notary Public, State of New York
Registration No. 01MI6017755
Monroe County
Commission Expires December 21, 20 06

MK/MR

Attachments: (1) Evaluation of Proposed Change
(2) Proposed Technical Specification Changes (Mark-up)

cc: S. J. Collins, NRC
P.D. Milano, NRC
Resident Inspector, NRC (Ginna)
P.D. Eddy, NYSDPS
J. P. Spath, NYSERDA

Attachment (1)

Evaluation of Proposed Changes

Attachment (1)
Evaluation of Proposed Change

1. DESCRIPTION

This letter is a request to amend Operating License No. DPR-18 for the R. E. Ginna Nuclear Power Plant (Ginna) to change the method for complying with the surveillance required by Technical Specification Surveillance Requirement 3.5.1.4.

2. PROPOSED CHANGE

This proposed change would modify Surveillance Requirement (SR) 3.5.1.4 to change the method of boron concentration verification for the ECCS Accumulators by addition of a requirement to monitor inleakage and to extend the sampling interval. The current method of verifying the boron concentration is to sample and analyze the boron concentration every 31 days on a staggered test basis, in effect resulting in each ECCS Accumulator being sampled every 2 months. This would be extended to sampling both ECCS Accumulators every six months. In addition, the inleakage to the tanks would be monitored every twelve hours based on ECCS Accumulator level changes. Monitoring limits are established based on calculations that assume that all level changes are due to unborated water leaking into the ECCS Accumulators. The proposed change to the Technical Specifications is provided in Attachment (2). Appropriate changes will be made to the Technical Specification Bases as well.

3. BACKGROUND

The function of the two ECCS Accumulators is to inject large quantities of borated water into the reactor vessel following the blowdown phase of a large break loss-of-coolant accident (LOCA) and to provide inventory to help accomplish the refill phase that follows thereafter. The ECCS Accumulators are pressure vessels partially filled with borated water and pressurized with nitrogen gas. Each ECCS Accumulator is piped into a Reactor Coolant System (RCS) cold leg via the high pressure safety injection lines. Each ECCS Accumulator is isolated from the RCS by a motor-operated isolation valve and two check valves in series. The motor-operated valves are normally open, with power removed from the valve motor to prevent inadvertent closure prior to or during an accident.

4. TECHNICAL ANALYSIS

Boron concentration is controlled in the ECCS Accumulators to prevent either excessive boron concentrations or insufficient boron concentrations. To prevent boron precipitation, Ginna uses simultaneous injection from the residual heat removal and the high-head safety injection systems. The simultaneous injection requires the primary system to be depressurized to below the shutoff head of the residual heat removal pumps. Maintaining the maximum ECCS

Accumulator boron concentration below the upper limit ensures that the ECCS Accumulators do not invalidate these actions. The minimum boron requirements are based on beginning-of-life reactivity values and are selected to ensure that the reactor will remain subcritical during the reflood stage of a large break LOCA. During a large break LOCA, credit is not taken for rod control cluster insertion such that the initial reactor shutdown is accomplished by void formation during blowdown, with long-term criticality control being achieved by boron in the ECCS and sump. The necessary ECCS Accumulator boron concentrations are a function of each core design and are specified each cycle. Level and pressure instrumentation is provided to monitor the availability of the tanks during plant operation.

The Technical Specification Surveillance Requirement (SR 3.5.1.4) verifies that the boron concentration remains within the required range by sampling. Currently, the boron concentration in the ECCS Accumulators is required to be verified by taking a sample of the water in the ECCS Accumulators every 31 days on a staggered test basis. A containment entry is required to take a sample from each of the two ECCS Accumulators. In addition, the water makeup source for the ECCS Accumulators is the Refueling Water Storage Tank (RWST) ensuring that the ECCS Accumulator boron concentrations remain within the upper and lower Technical Specification limits during intentional level increases.

The boron concentrations can be reduced by boron precipitation, however, the boron concentration in the ECCS Accumulators is well below the solubility limit of boric acid in water which is approximately 4300 ppm at 32°F. As such, there is no mechanism for boric acid concentration reduction in the ECCS Accumulators due to boron precipitation.

Another way ECCS Accumulator boron concentrations can be reduced is by dilution due to an addition of water containing a lower boron concentration (including back leakage from the RCS loops through the check valves). Two check valves in series minimize the possibility of leakage from the RCS into the ECCS Accumulators.

This proposed amendment would require leakage monitoring to be done every twelve hours in addition to taking samples from each ECCS Accumulator every six months. These six month samples would continue to be taken to verify the inleakage observations remain conservative. The associated Technical Specification Bases change would require the following:

- Verification of ECCS Accumulator boron concentration, by inleakage (change in level) monitoring every twelve hours.
- Verification of ECCS Accumulator boron concentrations, by sample, every 6 months.
- Verification of ECCS Accumulator boron concentration by sample if inleakage monitoring indicates that ECCS Accumulator boron concentration falls to within100 ppm of the TS limit.

Both engineering analyses and risk insights were used to determine the acceptability of this proposed change. They are presented below.

Engineering Analysis

To justify this proposed change, the ECCS Accumulator levels, volume additions, leakage in, leakage out, and sample concentrations were evaluated for both ECCS Accumulators for an eight

month period (the duration of the requested sampling interval plus approximately 25%) from mid April, 2005 (immediately after outage) to December 31, 2005. A review has shown this period to be representative of ECCS Accumulator behavior since 2003. In summary, the most significant influence on final boron concentration for either ECCS Accumulator following a designated period is the initial concentration of the same ECCS Accumulator at the beginning of the period.

No trend is evident that would suggest inleakage into the ECCS Accumulator is causing boron depletion. Nor is there any evidence to suggest that leakage from other water sources into the ECCS Accumulators is a problem at Ginna. The table below displays much of the data evaluated for the six-month period. One observation is that there was no significant depletion of any tank over the six-month period. It also should be noted that during this period no intentional level decrease or feed and bleed evolutions were performed to increase the boron concentration of either ECCS Accumulator, which would have been procedurally initiated if an unexplained level increase had occurred.

ECCS Accumulator	Number of level increase operations	Number of level decrease or sweetening operations	Maximum water added (gal)	ECCS Accumulator ppm Start	ECCS Accumulator ppm End	Delta ppm
A	0	0	0	2402	2400	-2
B	3	0	282*	2404	2405	1

* Conservatively assuming the fill was initiated at the low level alarm setpoint and continued to the high level alarm.

Other than inleakage, identifiable by a slow level increase over a period of days or weeks, there is no mechanism for dilution. The possibility of leakage out of the tank masking leakage into the tank from the RCS is highly improbable. All of the valves leaking into the ECCS Accumulator would have to collectively leak at an almost identical rate to those valves providing a leakage path out of the ECCS Accumulator.

It should also be noted that the level instrumentation scale is a relatively small portion of total ECCS Accumulator volume. The total range of indicated level (0 – 100%) represents only 14 inches of level, or 625 gallons (6.25 gal/%) of ECCS Accumulator volume. This equates to approximately 7.5% of the available accumulator water volume at normal operating level. The ECCS Accumulator level is annunciated on the main control board at a low level of 60% and a high level of 75% of this narrow band. Therefore, conservatively assuming the level was being maintained just above the low level alarm setpoint when an inleakage source was initiated, and the level increase was not noticed by the operators until the high level alarm annunciated, a maximum of 94 gallons of inleakage will have occurred prior to operator intervention. Even so, it is unlikely that this small amount of inleakage would go unnoticed, because level in the ECCS Accumulators is verified by the operators every 12 hours per SR 3.1.5.2.

The calculation below is presented to demonstrate the conservatism of the proposed surveillance requirements. To determine the amount of dilution achieved from the above maximum unmonitored inleakage, we use:

$C_1V_1 + C_2V_2 = C_fV_f$

Where:

C_1 = initial concentration of boron, median Tech Spec required value of 2350 ppm
V_1 = initial volume of water at the low level setpoint = 8311* + 62.5 = 8373.5 gallons
C_2 = boron concentration in the demineralized water, 0 ppm
V_2 = volume of water causing the dilution = 6.25 gal/% X 15% = 94 gallons
C_f = final concentration of boron in the ECCS Accumulator
V_f = final volume of water at that concentration = 8467.5 gallons

*Derived from1111 cubic feet at 50% level (see SR 3.5.1.2).

(2350 ppm)(8373.5) + (0 ppm)(94) = (C_f)(8467.5 gallons)

C_f = 2324 ppm

Therefore, the maximum undetected inleakage from a pure water source would only dilute the ECCS Accumulator by approximately 26 ppm.

If the above calculation is performed using Ginna's median required boron concentration after the planned EPU (2800 ppm), the result is a maximum dilution of approximately 31 ppm.

It should be noted that the operators recently identified and reported a 2% (12.5 gallons) increase in the A ECCS Accumulator level over a 12 day period. This equates to a potential inleakge of approximately 1 gallon per day, illustrating the high sensitivity of this method of detecting potential boron concentration changes.

During the period from January 2003 to December 2005, there has been no ECCS Accumulator boron enrichment operations required or performed during normal operation. With the exception of the B ECCS Accumulator sample taken in March 2005, the below graphs indicate the stability of the ECCS Accumulator volume and boron concentration over an extended (3 year) period of time. The March data point was evaluated as follows:

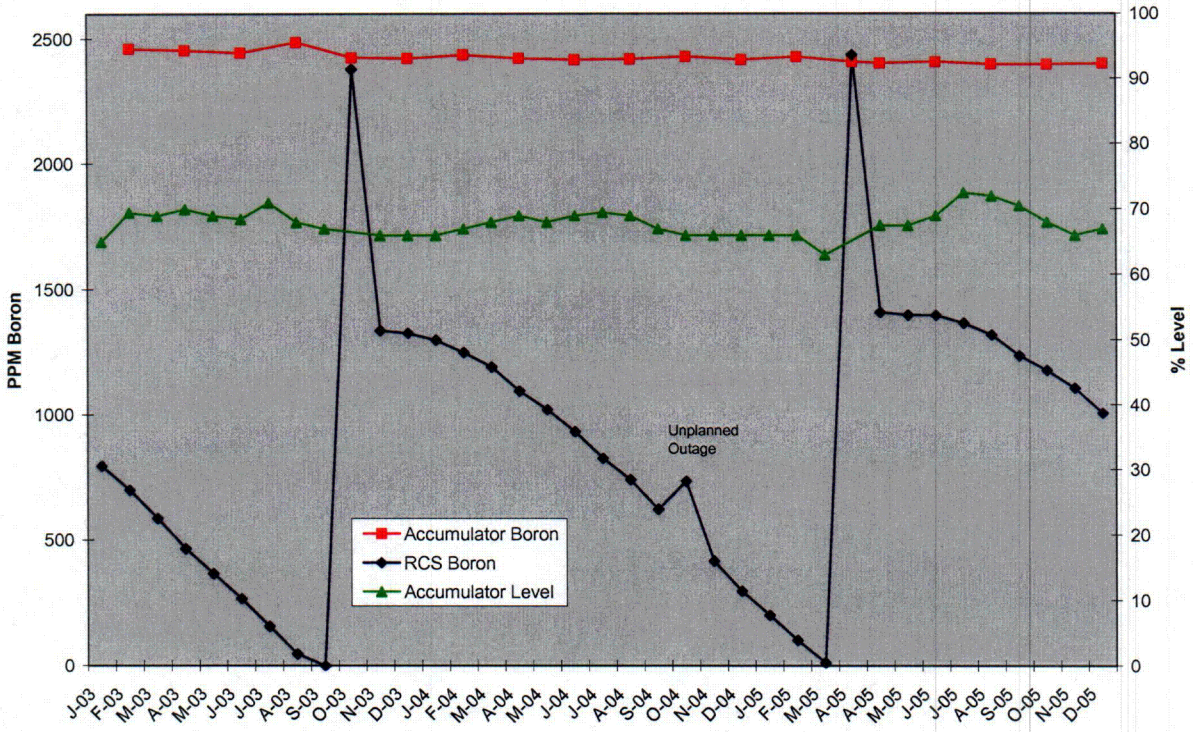
- The data point is problematic because it occurred at a time when RCS boron was approaching zero, when inleakage would produce the largest amount of dilution for a given volume of inleakage. Also, the accumulators were drained for maintenance and refilled from the RWST during the outage, so there was no subsequent sample to verify or invalidate the earlier sample result. However, records show there were no draining

evolutions during the time frame between the sample in question and the preceding sample, which would have occurred in the event of sufficient inleakage to dilute the accumulator by that amount. In addition, no maintenance was performed on the B ECCS Accumulator RCS loop isolation check valves during the outage, and the concentration has been stable since startup.

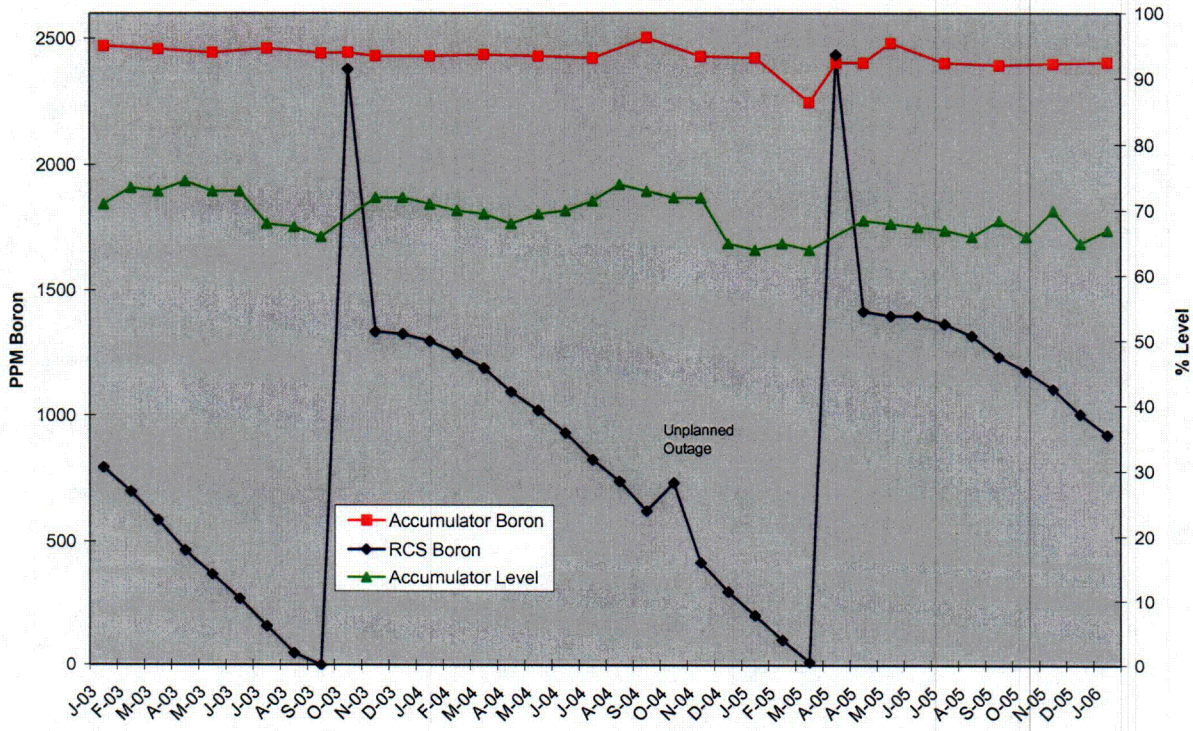
- The sample in question was recorded as 2247 ppm. This decrease of 177 ppm from the previous sample, although still within limits, was not identified as abnormal and investigated at the time. This has been entered into the Ginna Corrective Action Program (CAP). Initial investigation, including interviewing the technician who analyzed the sample, indicates a high probability that the two middle numbers were transposed when the data was recorded, which would indicate an actual concentration of 2427 (a 3 ppm increase from the previous sample).

Given the above information, it is believed that the March 2005 sample of the B ECCS Accumulator is anomalous, and not representative of the actual boron concentration at the time.

A Accumulator



B Accumulator



C01

Risk Insights

The surveillance test interval for sampling the boron concentration of the ECCS Accumulators is evaluated by considering these issues:

- The increase in core damage frequency (CDF) given an inadequate ECCS Accumulator boron concentration.
- The likelihood that the boron concentration would be less than 2100 ppm given the sampling interval is increased to once-per-six-months.

Conservatively, this evaluation did not assume that inleakage is monitored every twelve hours.

Increase in CDF given Inadequate Boron Concentration

Water from the ECCS Accumulators re-covers the core following an RCS blowdown (LOCA) to provide core cooling until the safety injection pumps can provide adequate water for reactor cooling. The ECCS Accumulators are designed to passively inject large quantities of borated water into the RCS immediately following an RCS pipe break. The borated water provides reactivity control in the unlikely event that the control rods fail to insert.

The frequency of a large break LOCA (> 0.1 ft^2) is on the order of two-in-one-hundred thousand each year (2E-5). This value is derived from NUREG-1829, Estimated Loss-of-Coolant Accident (LOCA) Frequencies through the Elicitation Process, Table 7.1, June 2005. Although a draft report for comment, this document is considered to reflect both the most recent industry experiences as well as the impact of aging. The derivation is accomplished using logarithmic interpolation from the data provided in the NUREG. The NUREG notes the likelihood of a break greater than 5,000 gpm (i.e. 3" diameter or 0.05 ft^2) is 2.8E-5 for a plant approaching the end-of-life, while the likelihood of a break greater than 25,000 gpm (i.e. 7" diameter or 0.27 ft^2) is 2.7E-6 for a plant approaching the end-of-life. Based on the logarithmic interpolation between these two points, the frequency of a LOCA > 0.1 ft^2 is less than 2E-5.

Given all support systems are available, the base failure likelihood that all control rods fail to insert per NUREG/CR-5500, Table 3 is on the order of one-in-a-million (1E-6) for a mechanical binding of all rods. Conservatively, the overall failure of the control rods to insert considering all failure modes is considered to be one-in-one-hundred thousand (1E-5). Additional failure likelihood is also considered due to the potential impact of the flow dynamics during a large break LOCA. For a double-ended hot leg break, there is assumed to be a 50% chance of failure. For a LOCA break of 0.1 ft^2, there is assumed to be a negligible chance of failure (1E-6). The failure likelihood of insertion for each break range is logarithmically interpolated using these two points. This is considered a further conservatism in the evaluation as the Ginna UFSAR credits control rod insertion in the small break LOCA evaluation (i.e. < 1.0 ft^2 LOCA).

The total likelihood of a LOCA with a rod failure, systematic and flow-induced, is the frequency of each of these large LOCA bins multiplied by the likelihood that the rods will not insert. This value is less than 1E-7.

Likelihood of Low Boron Concentration

The ECCS Accumulator boron concentration sample data was evaluated from January, 2000 to December, 2005. This data is placed in rank order using a median ranking method on a per ECCS Accumulator basis. From this ranking, there is approximately a 0.06% chance (see below table) that the boron concentration will fall below 2100 ppm on a single ECCS Accumulator given the historical surveillance practices. There were no instances where the boron concentration fell below 2100 ppm.

Extension of the surveillance interval to six months has the potential to increase the amount of RCS water transferred to the ECCS Accumulators over a given surveillance interval. It is assumed that the amount of RCS leakage to the ECCS Accumulators remains constant over time. Therefore, if the surveillance interval is increased by a factor of three then there will be three times as much fluid transferred between the RCS and the ECCS Accumulators (actual changes in the surveillance interval calculation vary based on the actual days between samples). Further, the RCS boron concentration drops as the fuel cycle progresses. RCS fluid at a lower boron concentration has an even larger impact on ECCS Accumulator boron concentration. For example, if the surveillance was done every other month and was changed to once per six months, the delta concentration would increase by a factor of four (without the change in RCS boron concentration over the cycle, a factor of three would be used). Therefore, if the ECCS Accumulator boron concentration dropped 20 ppm in two months the concentration is assumed to drop approximately 80 ppm in six months. The ECCS Accumulator boron concentration ranking is adjusted using this approach. This revised median ranking indicates that there is approximately a 2% (1.53%) chance that a single ECCS Accumulator will have a boron concentration less than 2100 ppm.

Below is an excerpt from the table of boron concentrations versus estimated boron concentrations for six month surveillance:

# (j)	Boron Concentration w/o Extension (PPM)	Median Rank %tile (j-0.3)/(n+0.4)		# (j)	Boron Concentration given Extension (PPM)	Median Rank %tile (j-0.3)/(n+0.4)
	2100	0.06%		1	1666.8	0.66%
1	2247	0.65%			2100.0	1.53%
2	2381	1.57%		2	2136.1	1.60%
3	2382	2.49%		3	2177.8	2.54%
4	2382	3.41%		4	2185.5	3.48%
....				....		
105	2472	96.59%		105	2953.6	98.40%
106	2482	97.51%		106	3544.0	99.34%
107	2487	98.43%				
108	2504	99.35%				

Extended Power Uprate (EPU)

Following EPU, the boron concentrations in both the RCS and ECCS Accumulators will be increased. The frequency of a large break LOCA is not expected to be noticeably affected by EPU. Further, the likelihood of rod insertion failure is not expected to be affected. The boric acid concentrations were varied to identify the sensitivity of this issue. This conservative evaluation demonstrated that under EPU conditions the boric acid concentration will fall below the revised technical specification threshold less than 3% of the time. Given the low likelihood of LOCA with the failure of the rods to insert, this will have a limited impact on risk.

Modeling Conservatisms

This risk evaluation does not credit the fact that there is Control Room indication for ECCS Accumulator level. It is likely that major changes in boron concentration will be associated with changes in ECCS Accumulator levels. Although this evaluation does not credit level monitoring, it is likely that crediting this monitoring would significantly reduce the likelihood that an ECCS Accumulator boron concentration will be found below 2100 ppm.

This evaluation also does not consider that a large LOCA occurring with one or both ECCS Accumulators injecting with less than 2100 ppm will not necessarily cause core damage. If the other ECCS Accumulator is above 2100 ppm and injects into the core, then the reactor may be shutdown due to the extra capacity of the other ECCS Accumulator. Depending on the time-in-cycle and the degree to which the ECCS Accumulators are below 2100 ppm, there may be only a slight increase in the energy output of the core until the borated water in the RWST causes a shutdown.

The EPU sensitivity evaluation is also quite conservative. The boric acid concentrations and RCS profile over the fuel cycle were chosen to maximize the impact on this evaluation. It is possible that future operations post-EPU might in reality result in less sensitivity regarding this issue.

Large Break LOCA Sensitivity Evaluation

There is some uncertainty associated with the parsing of the large break LOCAs over the large break LOCA range. There is also some uncertainty associated with the LOCA induced control rod failure likelihoods. To assess the possible impact of these assumptions, a calculation is done assuming the entire large break LOCA range (> 0.1 ft^2) will cause the failure of all the control rods. The entire large break LOCA range has an annual likelihood of (2E-5). This coupled with the likelihood that a ECCS Accumulator will have a boron concentration less then 2100 ppm (i.e., 2%) still yields a CDF increase less than 4E-7 (4E-7=2%*2E-5).

Results

The total likelihood of a LOCA with a failure of the control rods to insert is less than 1E-7. The likelihood that the ECCS Accumulators will have a low boron concentration given a six-month surveillance interval is less than 2%. Therefore, the likelihood of core damage resulting from extension of the boron concentration surveillance is significantly below 1E-7. The large early release frequency (LERF) impact is not explicitly calculated. A very small fraction of large

break LOCAs result in LERF events. This coupled with the low change in CDF ensures that the increase is LERF is also extremely small.

5. NO SIGNIFICANT HAZARDS DETERMINATION

This proposed change to the Operating Licenses submits changes in the method and frequency of verifying the boron concentration in the ECCS Accumulators as required by Technical Specification Surveillance Requirement 3.5.1.4. This Technical Specification requires that the boron concentration of each ECCS Accumulator be verified every 31 days on a staggered test basis. Currently, that requirement is met by taking a sample from each ECCS Accumulator every 2 months. The proposed change would require leakage into the ECCS Accumulator be monitored every twelve hours and a sample taken of each ECCS Accumulator every six months. Samples would continue to be taken to verify the inleakage observations remain conservative. Given the stability of the boron concentration in each tank since 2003, and the dose incurred taking the samples every 31 days, R.E. Ginna Nuclear Power Plant, LLC believes it is appropriate to change the surveillance method and interval.

R.E. Ginna Nuclear Power Plant, LLC has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The ECCS Accumulators are used only to respond to an accident and are not an accident initiator. Therefore, the probability of an accident has not increased.

Boron concentration is controlled in the ECCS Accumulators to prevent either excessive boron concentrations or insufficient boron concentrations. Post-loss-of-coolant accident (LOCA) emergency procedures directing the operator to establish simultaneous hot and cold leg injection are based on the worst case minimum boron precipitation time. Maintaining the maximum ECCS Accumulator boron concentration within the upper limit ensures that the ECCS Accumulators do not invalidate these steps. The minimum boron requirements of 2100 (2550 after EPU) ppm are based on beginning-of-life reactivity values and are selected to ensure that the reactor will remain subcritical during the reflood stage of a large break LOCA. During a large break LOCA, all control element assemblies are assumed not to insert into the core, and the initial reactor shutdown is accomplished by void formation during blowdown. Sufficient boron concentration must be maintained in the ECCS Accumulators to prevent a return to criticality during reflood. Level and pressure

instrumentation is provided to monitor the availability of the ECCS Accumulators during plant operation.

The Technical Specification Surveillance Requirement (SR 3.5.1.4) verifies that the boron concentration remains within the required range by sampling. Currently, the boron concentration in each ECCS Accumulator is required to be verified by taking a sample of the water in the ECCS Accumulator every 31 days on a staggered test basis. A containment entry is required to take a sample from each of the two ECCS Accumulators. In addition, the makeup water source for the ECCS Accumulators is from the RWST, which is maintained between 2300 ppm and 2600 ppm (2750 and 3050 after EPU) by SR 3.5.4.2, ensuring the ECCS Accumulators are not diluted during makeup/fill evolutions. However, the Reactor Coolant System boron concentration is lower during power operation than the boron concentration in the ECCS Accumulators. Two check valves in series prevent leakage from the Reactor Coolant System into the ECCS Accumulators.

This proposed amendment would require inleakage monitoring to be done every twelve hours in addition to taking samples from each ECCS Accumulator every six months. Samples would continue to be taken to verify the inleakage observations remain conservative.

The engineering analysis and risk insights combine to demonstrate that the method of ECCS Accumulator boron concentration verification can be changed from sampling every 31 days on a staggered test basis to monitoring inleakage every twelve hours and sampling each ECCS Accumulator every six months. The inleakage monitoring is based on a calculational method that has sufficient conservatism to predict the boron concentration of the ECCS Accumulator as shown by sample. Therefore, the ECCS Accumulator would remain capable of responding to an accident as described above and the consequences of an accident previously evaluated are not increased.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed change does not alter the function of any equipment, nor cause it to operate differently than it was designed to operate. All equipment required to mitigate the consequences of an accident would continue to operate as before. The proposed change alters the method of verification of the ECCS Accumulator boron concentration, but not the boron concentration requirements themselves.

Therefore, this change does not create the possibility of a new or different type of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The inleakge monitoring done to verify the concentration of boron in the ECCS Accumulators, is sufficiently conservative to ensure that a decrease in boron concentration would be detected, leading to attempts to increase the boron concentration or a need to sample the affected ECCS Accumulator. Sampling of the ECCS Accumulators every six months will continue to be done to ensure that the inleakage monitoring remains conservative and representative. If the boron concentration is maintained in the ECCS Accumulators, the system operates as assumed in the Updated Final Safety Analysis Report Chapter 15 analyses and the analyses continues to meet the dose consequences acceptance criteria given in the Updated Final Safety Analysis Report.

Therefore, this proposed change does not involve a significant reduction in the margin of safety.

Based on the above, R.E. Ginna Nuclear Power Plant, LLC concludes that the proposed amendment(s) present no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

In addition, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6. ENVIRONMENTAL ASSESSMENT

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c) (9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

7. PRECEDENT

- Millstone Unit 2 has changed their sampling frequency from 31 days to 6 months. Letter from S. Dembek (NRC) to M. L. Bowling, Jr. (NNEC), dated December 17, 1998, Issuance of Amendment – Millstone Nuclear Power Station Unit 2 (TAC No. M93734).
- Calvert Cliffs Nuclear Power Plant has changed their sampling frequency from 31 days to 6 months. Letter from Donna Skay (NRC) to P.E. Katz (CCNPP), dated December 19, 2002, Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 – Amendment Re: Safety Injection Tank Surveillance Frequency (TAC Nos. MB3974 and MB3975).

8. REFERENCES

Ginna UFSAR, Revision 19, Section 15.6.4.2.1

Regulatory Guide 1.177, An Approach for Plant-Specific, Risk-Informed Decision Making: Technical Specifications

Ginna DBCOR 2006-0009, Evaluation of the Risk Impact Associated with Extending the Accumulator Boron Concentration Surveillance Interval

9. REGULATORY COMMITMENTS

None

Attachment (2)

Proposed Technical Specification Changes (Mark-up)

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.1 Accumulators

LCO 3.5.1 Two ECCS accumulators shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with pressurizer pressure > 1600 psig.

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One accumulator inoperable due to boron concentration not within limits.	A.1	Restore boron concentration to within limits.	72 hours
B.	One accumulator inoperable for reasons other than Condition A.	B.1	Restore accumulator to OPERABLE status.	24 hours
C.	Required Action and associated Completion Time of Condition A or B not met.	C.1 AND C.2	Be in MODE 3. Reduce pressurizer pressure to ≤ 1600 psig.	6 hours 12 hours
D.	Two accumulators inoperable.	D.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.1.1	Verify each accumulator motor operated isolation valve is fully open.	12 hours
SR 3.5.1.2	Verify borated water volume in each accumulator is ≥ 1111 cubic feet (50%) and ≤ 1139 cubic feet (82%).	12 hours

SURVEILLANCE		FREQUENCY
SR 3.5.1.3	Verify nitrogen cover pressure in each accumulator is ≥ 700 psig and ≤ 790 psig.	12 hours
SR 3.5.1.4	Verify boron concentration in each accumulator is ≥ 2100 ppm and ≤ 2600 ppm.	~~31 days on a STAGGERED TEST BASIS~~
SR 3.5.1.5	Verify power is removed from each accumulator motor operated isolation valve operator when pressurizer pressure is > 1600 psig.	31 days

12 hours (by inleakage monitoring)
AND
6 months (by sample)