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Constellation Nuclear

Calvert Cliffs
Nuclear Power Plant

A Member of the Constellation Energy Group

January 31, 2002

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318
License Amendment Request: Safety Injection Tank Verification Frequency

Pursuant to 10 CFR 50.90, Calvert Cliffs Nuclear Power Plant, Inc. (CCNPP) hereby requests an amendment to Renewed Operating License Nos. DPR-53 and DPR-69 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 each safety injection tank (SIT) be verified every 31 days. Currently, that requirement is met by taking a sample from each SIT every 31 days. The proposed change would require leakage into the SIT to be monitored every twelve hours and a sample to be taken every six months. Samples would continue to be taken to verify the inleakage observations remain conservative. In addition, the requirement to sample the discharge of the operating high pressure safety injection pump prior to filling the SIT would remain.

Given the stability of the boron concentration in each tank since 1997 (Unit 2, 1998 for Unit 1) and the dose incurred taking the samples every 31 days, CCNPP believes it is appropriate to change the surveillance method as currently described in the Technical Specification Bases. In addition, sampling of the SIT requires a containment entry during power operation to draw the sample. Changing the method of boron concentration verification to require fewer samples would save 0.62 Rem per year. These containment entries are the largest contributor to non-outage routine occupational exposure at CCNPP.

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 SIT 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, although not explicitly calculated, is 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 2). We have also determined that operation with the

A001

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 Operations and Safety Review Committee and Offsite Safety Review Committee, 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 August 1, 2002. As noted above, continued sampling of the SITs on a 31-day 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 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 this matter, we will be pleased to discuss them with you.

Very truly yours,

STATE OF MARYLAND :
: **TO WIT:**
COUNTY OF CALVERT :

I, Charles H. Cruse, being duly sworn, state that I am Vice President - Nuclear Energy, Calvert Cliffs Nuclear Power Plant, Inc. (CCNPP), and that I am duly authorized to execute and file this License Amendment Request on behalf of CCNPP. 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 CCNPP employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.

Subscribed and sworn before me, a Notary Public in and for the State of Maryland and County of CALVERT, this 31st day of JANUARY, 2002.

WITNESS my Hand and Notarial Seal: LYNN M. TAYLOR
Notary Public

My Commission Expires: 2/1/2006
Date

CHC/PSF/bjd

Attachments: (1) Analysis
(2) Determination of Significant Hazards
(3) Technical Specification Marked-up Page

cc: R. S. Fleishman, Esquire
J. E. Silberg, Esquire
Director, Project Directorate I-1, NRC
D. M. Skay, NRC
H. J. Miller, NRC
Resident Inspector, NRC
R. I. McLean, DNR

ATTACHMENT (1)

ANALYSIS

BACKGROUND

The function of the four safety injection tanks (SITs) 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 SITs are pressure vessels partially filled with borated water and pressurized with nitrogen gas. Each SIT is piped into a Reactor Coolant System (RCS) cold leg via the high pressure safety injection (HPSI) and low pressure safety injection system. Each SIT 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.

PROPOSED CHANGE

This proposed change would modify Surveillance Requirement (SR) 3.5.1.4 to change the method of boron concentration verification for the SITs by monitoring inleakage and to extend the sampling interval to six months. The current method of verifying the boron concentration is to take a sample from each tank and analyze the boron concentration every 31 days. This would be extended to six months. In addition the inleakage to the tanks would be monitored every twelve hours based on SIT level changes. Monitoring limits are established based on calculations that assume that all level changes are due to unborated water leaking into the SITs. The proposed change to the Technical Specifications is provided in Attachment (3). Appropriate changes will be made to the Technical Specification Bases as well.

SAFETY ANALYSES

Boron concentration is controlled in the SITs to prevent either excessive boron concentrations or insufficient boron concentrations. Post-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 SIT boron concentration within the upper limit ensures that the SITs do not invalidate this calculation. The minimum boron requirements of 2300 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 SITs to prevent a return to criticality during reflood. 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 each SIT is required to be verified by taking a sample of the water in the SIT every 31 days. A containment entry is required to take a sample from each of the four SITs. In addition, the boron concentration of the water added to the SITs is also sampled at the discharge of the HPSI pump to ensure that the water being added to the SITs is within the required boron concentration limits prior to being added. All intentional sources of level increase have their boron concentrations administratively maintained to ensure that the SIT boron concentrations are within Technical Specification limits.

The boron concentrations can be reduced by boron precipitation, however, the boron concentration in the SITs is well below the solubility limit of boric acid in water which is 2.52 wt% at 32°F. This corresponds to a boron concentration of approximately 4400 ppm. As such, there is no mechanism for boric acid concentration reduction in the SITs due to boron precipitation.

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

This proposed amendment would require leakage monitoring to be done every twelve hours in addition to taking samples from each SIT every six months. These six month samples would continue to be taken to verify the inleakage observations remain conservative. In addition, the requirement to sample the discharge of the operating HPSI pump prior to filling the SIT would remain. The associated Technical Specification Bases change would require the following:

- Verification of SIT boron concentrations prior to Mode 3.
- Verification of SIT boron concentration, by inleakage monitoring every twelve hours.
- Verification of SIT boron concentrations, by sample, every 6 months.
- Verification of SIT boron concentration by sample if there is 10 inches of accumulated inleakage in any SIT.

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 SIT levels, volume additions, leakage in, leakage out, and sample concentrations (for the RCS and SITs) were evaluated for both units for a six month period from July 1, 1999 to December 31, 1999. A review has shown this period to be representative of SIT behavior since 1997. In summary, the most significant influence on final boron concentration for any given tank following a designated period is the initial concentration of the same tank at the beginning of the period.

No trend is evident that would suggest SIT boron depletion is quantifiable by leakage into the SIT. Nor is there any evidence to suggest that leakage from other water sources into the SITs is a problem at Calvert Cliffs. The table below displays much of the data complied, graphed and evaluated for the six-month period. The data for the 22B SIT seems to suggest that there is a qualitative relationship between boron dilution and total cumulative additions. An additional observation is that there was no significant depletion of any tank over the six-month period. It should be noted that during this period no feed and bleed evolutions were performed to increase the boron concentration of any SIT.

SIT	Outleakage inches	Inleakage inches	Water added inches	SIT ppm Start	SIT ppm End	Delta ppm	Total # of Additions
11A	14	0	19	2631	2638	7	4
11B	26 3/4	0	26 1/2	2511	2494	-17	6
12A	8 1/4	6 1/4	7 3/4	2619	2605	-14	2
12B	17	0	20 1/2	2656	2645	-11	5
21A	1 3/4	2	1 3/4	2647	2644	-3	1
21B	9	0	9 3/4	2651	2640	-11	7
22A	30 3/4	0	32 3/4	2641	2634	-7	13
22B	140	0	145 1/2	2634	2576	-58	27

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 SIT would have to collectively leak at an almost identical rate to those valves providing a leakage path out of the SIT. Since the replacement of the soft seats on the valves that isolate the SITs from the RCS with hard seats, the leakage in past these check valves has been minimal.

If we trend increases in SIT level then it is important to have the ability to differentiate between inleakage and level replenishment. This is made easier when the SIT levels are trended and graphed over time. Inleakage shows up as a gradual increase and SIT additions show up as a step change. Examples are given in Figures 1 and 2.

The calculation below is presented to demonstrate the conservatism of the proposed surveillance requirements. In addition, it justifies the Technical Specification Bases requirement for sampling after a 10 inch level increase.

Maximum Allowable Leakage Calculation

This calculation demonstrates the amount of leakage required to lower the boron concentration from the administrative limit of 2450 ppm to the Technical Specification limit of 2300 ppm. All leakage into the tank is assumed to be demineralized water at 0 ppm.

The volume of the tank is derived from the Technical Specification minimum limit of 1113 cubic feet (187 inches indicated volume). Because the tanks have a dished bottom, there is a certain volume of water (744 gallons) below the 0 reference point of the level indication. Above the 0 reference point, a 1 inch level change equates to 39.66 gallons at 100°F. Therefore, the tank volume is:

744 gallons + 187 inches (39.66 gallons/inch) = 8160 gallons

To determine the amount of demineralized water needed to dilute the tank as described above, we use:

$$C_1V_1 + C_2V_2 = C_fV_f$$

Where:

C_1 = the initial concentration of boron, 2450 ppm
V_1 = the initial volume of water at that concentration
C_2 = the boron concentration in the demineralized water, 0 ppm
V_2 = the volume of water required for dilution
C_f = the final concentration of boron in the tank, 2300 ppm
V_f = the final volume of water at that concentration, 8160 gallons

(2450 ppm)(V_1) + (0 ppm)(V_2) = (2300 ppm)(8160 gallons)
(2450 ppm)(V_1) = 18768000 ppm-gallons
V_1 = 7660 gallons

Therefore:

V_2 = 8160 gallons – 7660 gallons = 500 gallons of demineralized water
At about 40 gallons per inch of indicated level change, this equates to a level change of 12.5 inches.

Therefore, a level change of 12.5 inches would be necessary to reduce the boron concentration to the Technical Specification minimum assuming only non-borated water leaked into the SIT. There will be a requirement to sample the SIT if a level increase of 10 inches is observed. This will ensure that the source of any inleakage is known and the boron concentration can be assured to remain above the minimum.

As shown above, the maximum inleakage to any SIT from an uncontrolled source for the six-month period from July 1, 1999 to December 31, 1999 was 6.25 inches. Level changes that would require a sample rarely occur.

Risk Insights

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

- The increase in core damage frequency (CDF) given an inadequate SIT boron concentration.
- The likelihood that the boron concentration would be less than 2300 ppm given the sampling frequency is increased from one month to six months.

This evaluation did not assume that inleakage is monitored every twelve hours.

Increase in CDF given Inadequate Boron Concentration

Water from the SITs re-covers the core following a RCS blowdown (LOCA) to minimize core damage until the safety injection pumps can provide adequate water for reactor cooling. The tanks are designed to passively inject large quantities of borated water into the RCS immediately following a large pipe break. The SITs are only required for mitigation of a large break LOCA.

The borated water provides reactivity control in the unlikely event that the control rods fail to insert. Due to flow dynamics, it is reasonable to assume that the larger the LOCA, the more likely the rods will not insert.

The frequency of a large break LOCA (0.5 ft^2 to 9.62 ft^2) is on the order of two-in-a-million each year (2E-6). This value is derived from NUREG/CR-5750, Rates of Initiating Events at U.S. Nuclear Power Plants: 1987-1995. The derivation is accomplished using log normal interpolation from the data provided in the NUREG.

Given all support systems are available, the base failure likelihood that all control rods fail to insert is on the order of four-in-a-million (4E-6). An additional failure likelihood is also considered due to the potential impact of the flow dynamics during a large break LOCA. Since the large break LOCA frequency addresses a range of LOCA sizes, the likelihood of flow induced control rod insertion failure varies with the LOCA break size. For a double-ended hot leg break, there is assumed to be a 50% chance of failure. For the smallest large break LOCA, 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.

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 soft seat SIT discharge check valves were replaced with hard seats in the 1998 refueling outage for Unit 1 and the 1997 refueling outage for Unit 2. This replacement reduced the amount of leakage into the SITs. The SIT boron concentration sample data is evaluated using data after these replacements. This data is placed in rank order using a median ranking method on a per SIT basis. From this ranking, there is less than a 0.2% chance that the boron concentration will fall below 2300 ppm on a single SIT given monthly surveillance. There were no instances where the boron concentration fell below 2350 ppm.

Extension of the surveillance interval to six months has the potential to increase the amount of RCS water transferred to the SITs over a given surveillance interval. It is assumed that the amount of RCS leakage to the SITs remains constant over time. Therefore, if the surveillance interval is increased by a factor of six then there will be six times as much fluid transferred between the RCS and the SITs. Further, the RCS boron concentration drops as the fuel cycle progresses. RCS fluid at a lower boron concentration has an even larger impact on SIT boron concentration.

This method is used to increase the as-found SIT delta boron concentrations. For a six-month extension, the delta boron concentrations from month to month are increased by a factor of 7.6. For example, if the SIT boron concentration dropped 10 ppm in a single month the concentration is assumed to drop 76 ppm in six months.

The SIT boron concentration ranking is adjusted using this factor of 7.6 increase in delta ppm concentrations. This revised median ranking indicates that there is approximately a 2% chance that a single SIT will have a boron concentration less than 2300 ppm.

Modeling Conservatisms

This risk evaluation does not credit the fact that there is Control Room indication for SIT level. It is likely that major changes in boron concentration will be associated with changes in SIT levels. Although this evaluation does not credit this monitoring, it is likely that crediting this monitoring would significantly reduce the likelihood that a SIT boron concentration will be found below 2300 ppm.

This evaluation also does not consider that even if a large LOCA occurs and one or more SITs inject with less than 2300 ppm, this does not necessarily cause core damage. If the other SITs are above 2300 ppm, then the reactor may be shutdown due to the extra capacity of the other SITs. Depending on the time-in-cycle and the degree to which the SITs are below 2300 ppm, there may be only a slight increase in the energy output of the core until the borated water in the refueling water tank causes a shutdown.

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 (0.5 ft^2 to 9.62 ft^2) will cause the failure of all the control rods. The entire large break LOCA range has an annual likelihood of (2E-6). This coupled with the likelihood that a SIT will have a boron concentration less then 2300 ppm (i.e., 2%) still yields a CDF increase less than 1E-7 (4E-8=2%*2E-6).

Results

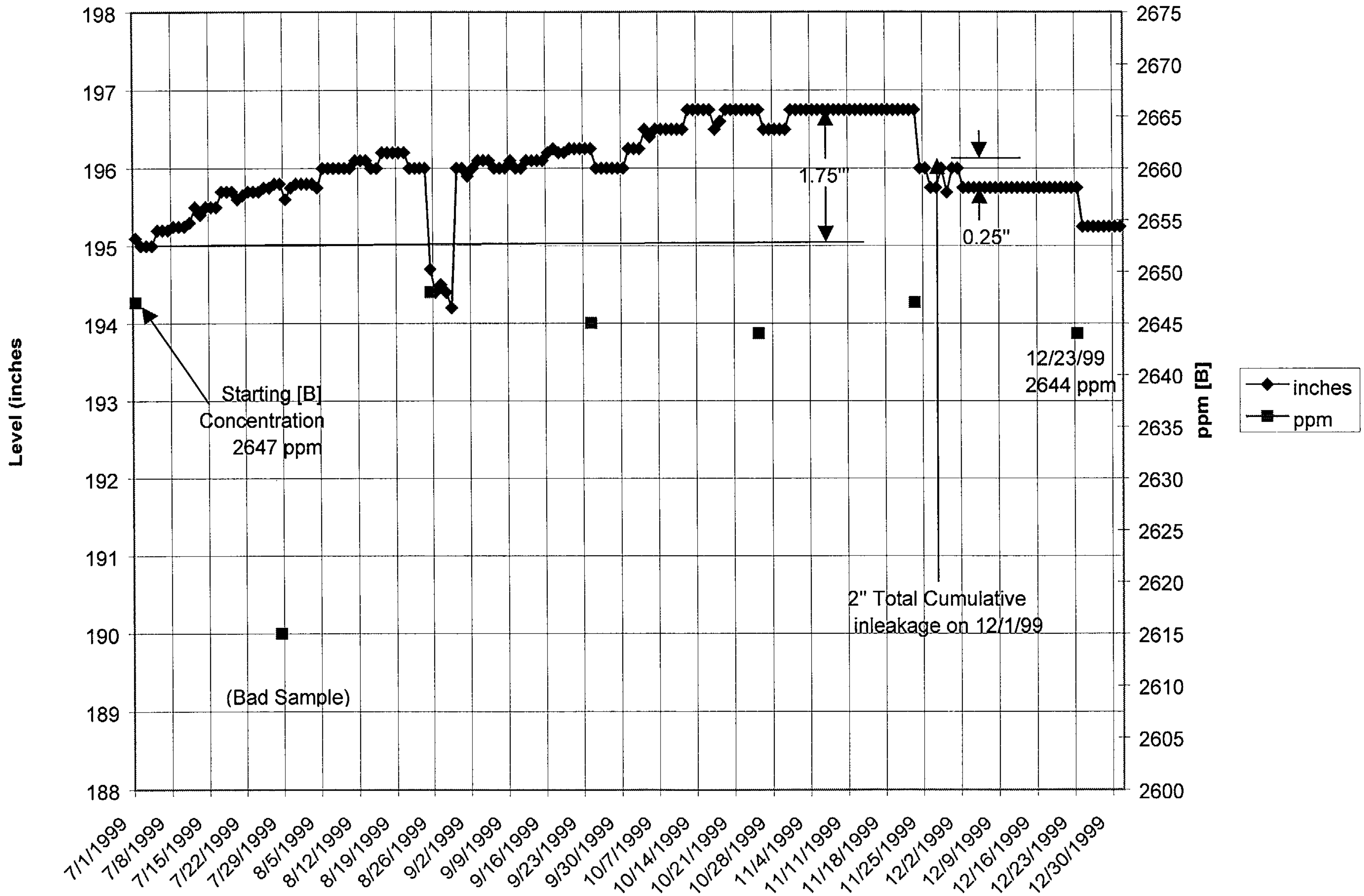
The total likelihood of a LOCA with a failure of the control rods to insert is less than 1E-7. The likelihood that the SITs will have a low boron concentration given a six-month surveillance interval is less than 2%. Therefore, the likelihood of core damage resulting from extension of the boron concentration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

CONCLUSION

The engineering analysis and risk insights combine to demonstrate that the method of SIT boron concentration verification can be changed from sampling every 31 days to monitoring inleakage every twelve hours and sampling every six months. The inleakage monitoring is based on a calculational method with sufficient conservatism to predict the boron concentration of the SITs as shown by sample.

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).


198
197
196
195
194
193
192
191
190
189
188
Level (inches
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2665
2660
2655
2650
2645
2640
2635
2630
2625
2620
2615
2610
2605
2600
ppm [B]
inches
ppm
1.75"
0.25"
Starting [B]
Concentration
2647 ppm
(Bad Sample)
12/23/99
2644 ppm
2" Total Cumulative
inleakage on 12/1/99
7/1/1999
7/8/1999
7/15/1999
7/22/1999
7/29/1999
8/5/1999
8/12/1999
8/19/1999
8/26/1999
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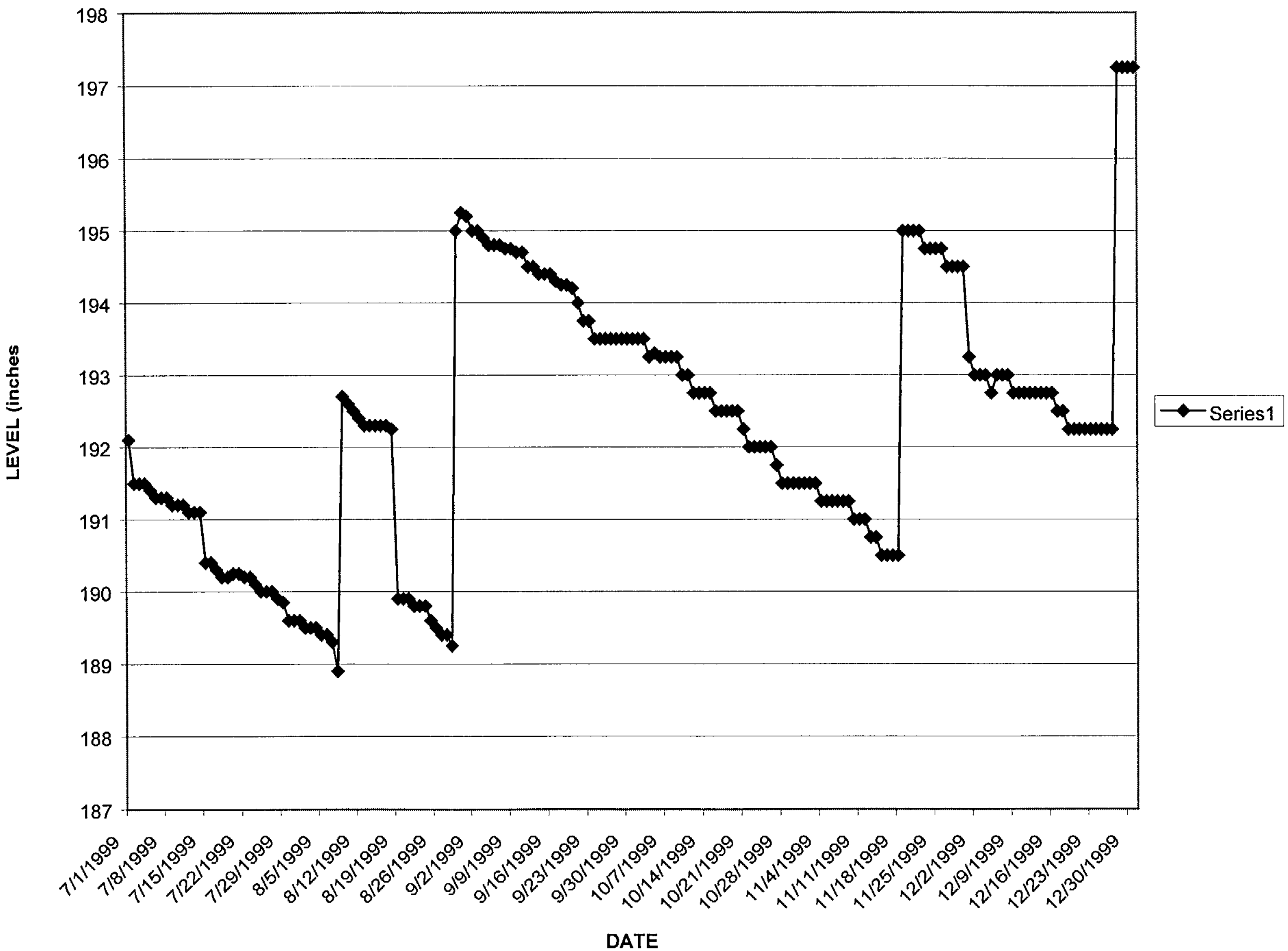
FIGURE 1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197
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LEVEL (inches
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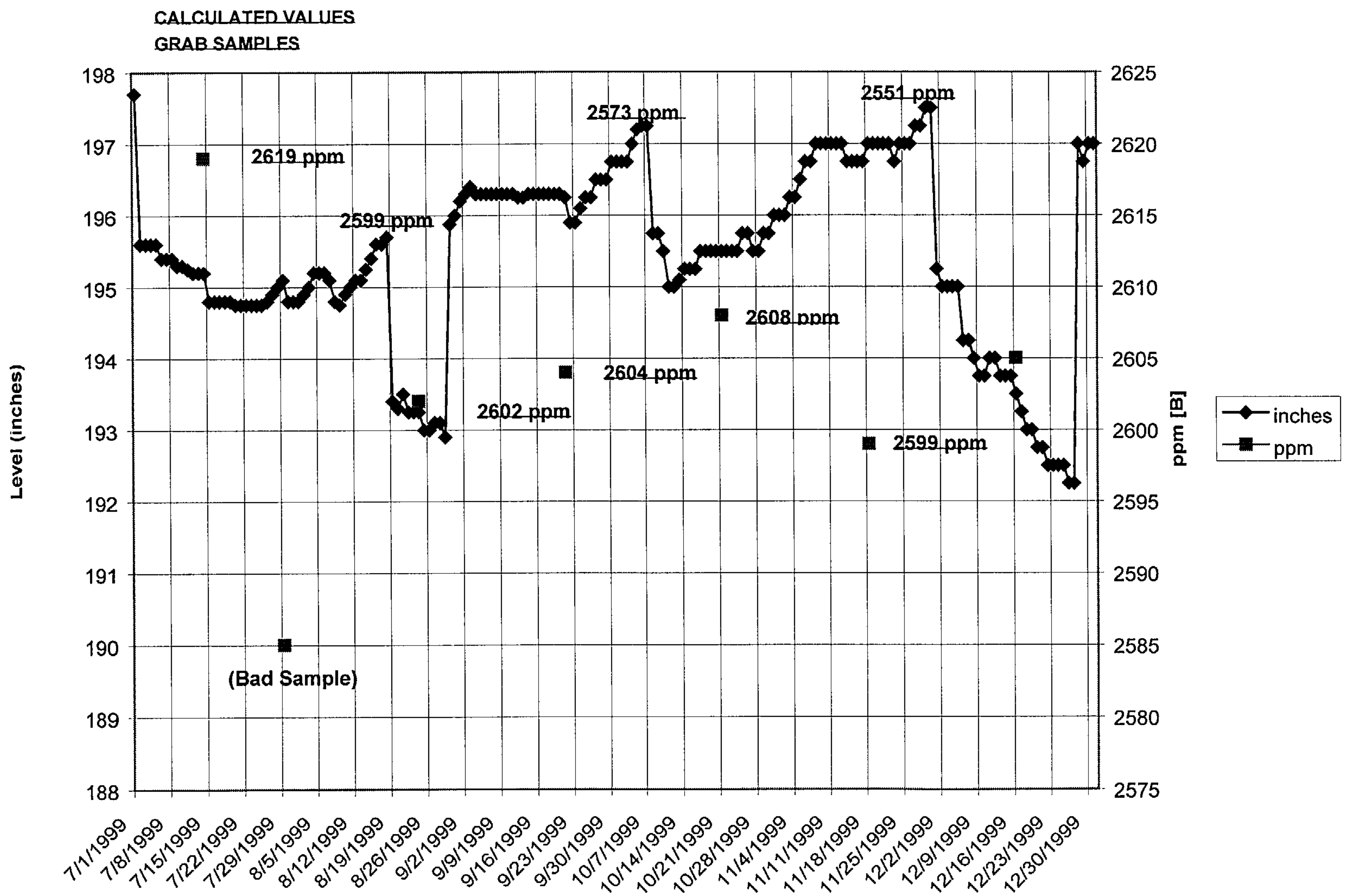
DATE
Series1

FIGURE 2


CALCULATED VALUES
GRAB SAMPLES
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2599 ppm
2573 ppm
2551 ppm
2608 ppm
2604 ppm
2602 ppm
2599 ppm
(Bad Sample)
inches
ppm
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197
196
195
194
193
192
191
190
189
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2620
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11/4/1999
11/11/1999
11/18/1999
11/25/1999
12/2/1999
12/9/1999
12/16/1999
12/23/1999
12/30/1999

FIGURE 3

ATTACHMENT (2)

DETERMINATION OF SIGNIFICANT HAZARDS

This proposed change to the Renewed Operating Licenses submits changes in the method and frequency of verifying the boron concentration in the safety injection tanks (SITs) as required by Technical Specification Surveillance Requirement 3.5.1.4. This Technical Specification requires that the boron concentration of each SIT be verified every 31 days. Currently, that requirement is met by taking a sample from each SIT every 31 days. The proposed change would require leakage into the SIT be monitored every twelve hours and a sample taken every six months. Samples would continue to be taken to verify the inleakage observations remain conservative. In addition, the requirement to sample the discharge of the operating high pressure safety injection pump prior to filling the SIT would remain. Given the stability of the boron concentration in each tank since 1997, and the dose incurred taking the samples every 31 days, Calvert Cliffs Nuclear Power Plant believes it is appropriate to change the surveillance method and interval.

The proposed change has been evaluated against the standards in 10 CFR 50.92 and has been determined to not involve a significant hazards consideration, in that operation of the facility in accordance with the proposed amendment would not:

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

   Boron concentration is controlled in the safety injection tanks (SITs) 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 SIT boron concentration within the upper limit ensures that the SITs do not invalidate this calculation. The minimum boron requirements of 2300 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 SITs to prevent a return to criticality during reflood. 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 each SIT is required to be verified by taking a sample of the water in the SIT every 31 days. A containment entry is required to take a sample from each of the four SITs. In addition, the boron concentration of the water added to the SITs is also sampled at the discharge of the high pressure safety injection pump to ensure that the water being added to the SITs is within the required boron concentration limits prior to being added. All intentional sources of level increase have their boron concentrations administratively maintained to ensure that the SIT boron concentrations are within Technical Specification limits. However, the Reactor Coolant System boron concentration is lower during power operation than the boron concentration in the SITs. Two check valves in series prevent leakage from the Reactor Coolant System into the SITs.

   This proposed amendment would require inleakage monitoring to be done every twelve hours in addition to taking samples from each SIT every six months. Samples would continue to be taken to verify the inleakage observations remain conservative. In addition, the requirement to sample the discharge of the operating high pressure safety injection pump prior to filling the SIT would remain.

   As noted above, the SITs are used only to respond to an accident and are not an accident initiator. Therefore, the probability of an accident has not increased.

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

Therefore the probability or consequences of an accident previously evaluated are not increased.

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

The proposed change does not alter the function of any equipment, nor has 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 SIT 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. *Involve a significant reduction in a margin of safety.*

The margin of safety defined by 10 CFR Part 100 has not been significantly reduced. The inleakge monitoring done to verify the concentration of boron in the SITs, is sufficiently conservative to ensure that the boron concentration would be underpredicted, leading to attempts to increase the boron concentration or a need to sample the affected SIT. Sampling of the SITs every six months will continue to be done to ensure that the inleakage monitoring remains conservative and representative. Water added to the SITs will also continue to be sampled to ensure that it meets the minimum boron concentrations. If the boron concentration is maintained in the SITs, the system operates as assumed in the Updated Final Safety Analysis Report Chapter 14 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.

ATTACHMENT (3)

TECHNICAL SPECIFICATION

MARKED-UP PAGE

3.5.1-2

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.5.1.1	Verify each SIT isolation valve is fully open.	12 hours
SR 3.5.1.2	Verify borated water volume in each SIT is ≥ 1113 cubic feet (187 inches) and ≤ 1179 cubic feet (199 inches).	12 hours
SR 3.5.1.3	Verify nitrogen cover pressure in each SIT is ≥ 200 psig and ≤ 250 psig.	12 hours
SR 3.5.1.4	Verify boron concentration in each SIT is ≥ 2300 ppm and ≤ 2700 ppm. 12 hours (by inleakage monitoring) AND 6 months (by sample)	~~31 days~~ AND -----NOTE ---- Only required to be performed for affected SIT -------------- Once within 1 hour prior to each solution volume increase of ≥ 1% of tank volume
SR 3.5.1.5	Verify power is removed from each SIT isolation valve operator when pressurizer pressure is ≥ 2000 psig.	31 days