Attached is the sixth group of Draft RAI's for the Hope Creek EPU. This group of RAI's includes revised questions and a new RAI from the SBWB branch. Question 3.8 can-not be revised until the draft SE for the GE interim methods is completed. We can start arranging conference calls next week.

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MESSAGE	899	02/23/2007 3:51:40 PM
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Options
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"DRAFT RAI's"

REQUEST FOR ADDITIONAL INFORMATION
ON THE HOPE CREEK GENERATING STATION,
EXTENDED POWER UPRATE
TAC NO. MD3002

This e-mail aims solely to prepare you and others for the requested conference call. It does not formally request for information, nor does it convey a formal NRC staff position.

13) Containment and Ventilation Branch (SCVB)

13.1 Section 4 of Attachment 1, Request for Change to Technical Specifications Extended power Uprate addressed Ultimate Heat Sink and the design calculation for UHS temperature limits. It was stated that the Emergency Core Cooling System (ECCS) cooler loads in the UHS temperature limit calculation are based on an updated reactor building GOTHIC model analysis and that the previous evaluation was based on a reactor building model that was built on a spread sheet. Describe the results of the analyses, in terms of whether they caused higher or lower ECCS cooler loads.

13.2 Section 4.4 of Attachment 4, NEDC-33076P, Revision 2 addressed the Main Control Room Atmosphere Control System. It was stated that "there are no changes to the MCR envelope and there are no significant changes to the temperatures in the adjacent walls and ceilings." Describe the areas surrounding the Control Room and what was considered in those areas to conclude that there are no significant changes to the temperatures in the adjacent walls and ceilings of the Control Room.

13.3 Discuss and confirm that the Filtration, Recirculation, and Ventilation System's (FRVS) ability on achieving a negative draw down pressure in the secondary containment is not impacted by the EPU. Also, identify the maximum FRVS inlet temperature under EPU operating conditions and its relationship to any design inlet temperature limitations.

13.4 Section 6.6 of Attachment 6 addressed Diesel Generator Room (SDG) temperature. It was stated that the SDG remains below rated capacity. Confirm that the design basis heat loads are based on rated capacity (not actual loading) and assure that the ability of the safety-related SDG Room Recirculation System coolers to maintain the room within the required temperature is not impacted by the EPU.

13.5 Section 6.6 of Attachment 6 states that there is no increase in the design basis heat loads in the spent fuel pool (SFP) area. Discuss and confirm that the effects on the SFP area HVAC due to higher burnup fuel in the spent fuel pool are fully considered. Also, address whether there are any effects due to EPU on the ventilation system that could result from loss of SFP cooling.

13.6 Are there any modifications planned to the HVAC systems (including atmospheric cleanup systems) as a result of the EPU? Clearly define the areas that will see higher

heat loads due to EPU, magnitude of the increase, and the basis for determining that the existing systems are adequate under post EPU conditions (with or without modifications).

13.7 NEDC 33076P Revision 2 Section 4.1 Explain why the choice of the RHR heat exchanger K value is conservative. Describe the program to ensure that this value is not exceeded.

13.8 NEDC 33076P Revision 2 Section 4.1 Verify that all input parameters to the containment peak pressure and temperature, environmental qualification and subcompartment analyses remain the same as those in the updated final safety analysis report except for those affected by the power uprate. For example, containment volume, heat sink descriptions, heat exchanger performance, equipment flow rates and flow temperatures, initial relative humidity, ultimate heat sink temperature, etc. justify any changes made for the power uprate analyses.

13.9 NEDC 33076P Revision 2 Section 4.1 What is the temperature limit for piping attached to the torus? What is the calculated peak temperature of this piping?

13.10 NEDC 33076P Revision 2 Section 4.1.1.2 Containment structural design basis temperature is stated to be 340 F. This is higher than that of some other BWRs and is usually the temperature limit for EQ. Verify that 340 F is the correct value.

13.11 NEDC 33076P Revision 2 Section 4.1.2.3 Provide the value of pressure differential calculated for the EPU and the Hope Creek pressure difference limit.

13.12 NEDC 33076P Revision 2 Table 1-1 shows that both the STEMP and the SHEX codes are used for the ATWS event. Describe the function of each code in this calculation.

13.13 NEDC 33076P Revision 2 Section 4.1 Is metal-water reaction increased by the EPU. What is the effect on containment response?

13.14 NEDC 33076P Revision 2 Section 4.1.1.1(a) Please provide the peak suppression pool temperatures resulting from the postulated ATWS, Station Blackout and Appendix R Fire events.

13.15 NEDC 33076P Revision 2 Section 4.7 What, if any, changes are necessary to CADS operation or nitrogen storage due to the power uprate?

Revised Questions from (SBWB):

3.2 The NRC review of previous EPU applications included evaluation of the dynamic effects and missiles that might result from plant equipment failures at EPU operating conditions, as well as the effects of a loss-of-coolant accident (LOCA). The Hope Creek markup (Attachment 11 Section 2.8.6.2 of the submittal) does not address this specific concern, please justify why similar criteria does not apply to the Hope Creek spent fuel storage.

3.5 In NEDC-33172P, “SAFER/GESTR-LOCA for HCGS at Power Uprate,” it was reported that the Licensing Basis PCTs are 1380 F for GE14 and 1540 F for SVEA-96+. Please provide the following additional information:

a) What is the corresponding break size for above Licensing Basis PCTs, and is it classified as small or large break LOCA? Is the current Licensing Basis PCT is based on small or large break LOCA? If they are different, explain why.

b) Was top-peaked and mid-peaked axial power shape included in establishing the MAPLHGR and determining the limiting PCT?

c) In previous EPU LOCA analyses, the staff has noted that the fuel types did not significantly impact the value of PCT, provided that the limiting LOCA event was a small break. The explanation for this was based on the fact that the affect of fuel stored energy was insignificant for small break LOCA. Explain why a relatively large difference in PCT values (160 F) between GE14 and SVEA-96+ exists.

d) The PUSAR indicates that the limiting PCT for GE14 increases 10 F from 1370 F to 1380 F before and after EPU. Please provide the limiting PCT for SVEA before and after EPU. The PCT changes due to EPU were typically within 20 F. Please confirm if it is also true for SVEA fuel. If not, then please explain why.

New Question from (SBWB):

Maine Yankee Lesson Learned.

3.57 Section 1.2.2 Computer Codes, Table 1-2 of the PUSAR lists all the nuclear steam system codes used for the EPU request. This section indicates that the HCGS application of these codes complies with the limitations, restrictions, and conditions specified in the applicable NRC SE report that approved each code, with exceptions as noted in Table 1-2. The staff has noted that in Section 2.0 of Attachment 15 to the submittal, a limited number of those codes (TGBLA, PANACEA, ISCOR, ODYN, TASC, SAFER and GESTR), and their methods and range of applications were discussed. However, the report did not include all the codes listed in Table 1-2 of the PUSAR.

As part of the Maine Yankee Lesson Learned, please review the fuel vendor's analytical methods and code systems (neutronic, LOCA, transient, and accidents, etc.) used to perform the safety analyses supporting the HCGS EPU application and provide the following information:

a) Confirm that the steady state and transient neutronic and thermal-hydraulic analytical methods and code systems used to perform the safety analyses supporting the EPU conditions are being applied within the NRC-approved applicability ranges.

b) Confirm that for the EPU conditions, the calculational and measurement uncertainties applied to the thermal limits analyses are valid for the predicted neutronic and thermal-hydraulic core and fuel conditions.

c) Confirm that the assessment database and the assessed uncertainty of models used in all licensing codes that interface with or are used to simulate the response of HCGS during steady state, transient or accident conditions remain valid and applicable for the EPU conditions.