

REQUEST FOR ADDITIONAL INFORMATION (RAI)

LICENSE AMENDMENT REQUEST TO

IMPLEMENT PRNM/ARTS/MELLLA

ENERGY NORTHWEST

COLUMBIA GENERATING STATION

DOCKET NO. 50.397

REACTOR SYSTEMS BRANCH (SRXB)

SRXB RAI - 1

In page 1-2 of NEDC-33507P (Rev. 1), plants with either full or partial Average Power Range Monitor/Rod Block Monitor/Technical Specifications/Maximum Extended Load Line Limit Analysis (ARTS/MELLLA) were listed. The staff requests the licensee to clarify the following:

- a) Does CGS plan to implement full or partial ARTS/MELLLA?
- b) Provide the basis for your decision in part (a) and the main differences between the two options with respect to CGS plant operation.

SRXB RAI - 2

Provide the CGS core design for which the MELLLA analysis was performed and the following results of fuel-dependent portion of the analysis:

- a) Describe core design for the current Cycle 20 for which the MELLLA analysis was performed, including number of GE14 and ATRIUM-10 fuels assumed to comprise the core, and their burnup history (i.e., number of cycles exposed in the core) for each fuel types.
- b) For a given core condition of a mixed core, the Specified Acceptable Fuel Design Limits (SAFDLs), such as MCPR, LHGR, PCT, etc., depend on the type of fuel design and their respective burnup history. Which fuel design (GE14 or ATRIUM-10) produces the limiting SAFDLs for the transient and accident analyses performed at the MELLLA conditions? Explain why.

SRXB RAI - 3

The fourth bullet from the bottom of page 7-2 of NEDC-33507P (Rev. 1) stated, "A full core of GE14 fuel is assumed to comprise the core."

- a) Clarify which of the transient and accident analyses (i.e., AOOs, LOCA, ASME Overpressure and ATWS) assumed a full core of GE14 fuel.
- b) Explain why GE14 fuel was assumed to comprise the entire core when the core included ATRIUM-10 fuel, as well.

- c) If a full core of GE14 fuel was assumed to comprise the core, then explain how the analysis captures a situation when ATRIUM-10 fuel is more limiting in the transient and accident analyses, and provide reasonable assurance as to how the analysis of record is most conservative.

SRXB RAI - 4

In Table 7-1 of NEDC-33507P, "ECCS-LOCA Rated Thermal Power" was assumed to be equal to 3629 MWt, which is 4.1% (143 MWt) higher than the Current Licensed Thermal Power (CLTP) of 3486 MWt. The staff understands that Appendix K to 10 CFR Part 50 requires analyses to be performed at 2% higher than the CLTP to allow for instrumentation error. Explain why LOCA analysis was performed at a thermal power which is 4.1% higher than the CLTP.

SRXB RAI - 5

Describe your training program for the operators in preparation for implementing the ARTS/MELLLA operation at CGS.