



UNITED STATES
NUCLEAR REGULATORY COMMISSION

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November 2, 1995

MEMORANDUM TO: Brian E. Holian, Acting Director
Project Directorate III-1
Division of Reactor Projects - III/IV

FROM: T. J. Kim, Lead Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV *T. J. Kim*

SUBJECT: SWISS EXTENDED POWER UPRATE PROGRAM

On October 26, 1995, M. Cullingford, R. Frahm, and I met with Mr. Patrich Meyer of the HSK [Swiss equivalent of the NRC] to discuss the overall content of their draft GUTACHTEN [safety evaluation report - written in German] issued last month on a 15 percent power uprate for the Kernkraftwerk Leibstadt (KKL) facility in Switzerland. Mr. Meyer is currently in the Washington, D.C. area on business for about 3 months (until the end of November) and has been interfacing with the NRC staff on several technical issues.

The following is background information on KKL:

- BWR-6, approximately 10 years of operation, similar to Grand Gulf.
- Original licensed power - 3012 Mwt.
- Uprated from 3012 Mwt to 3138 Mwt (104.2 percent) in 1986.
- The main generator was replaced in an earlier outage.
- The draft safety evaluation report addresses uprate from 3138 Mwt to 3600 Mwt. This corresponds to 114.7 percent of current rated power and about 120 percent of original rated power.

The draft safety evaluation report requests the power uprate to be implemented in four stages (106 percent, 109 percent, 112 percent and 114.7 percent), each stage lasting approximately 1 year. It appears that the program has a strong focus on testing and surveillance requirements. At the end of each power level increase, a report documenting the results of the tests/surveillances is submitted to HSK.

The power uprate test program requires, among other tests, generator load rejection, recirculation pump trips, feed pump trips, and core stability, as well as many surveillance requirements regarding fuel behavior and vibration. It is interesting to note that the draft safety evaluation report contains a number of "conditions" for each new power level. For example, the applicant (KKL) is requested to perform and provide the results of their detailed plant aging studies by the end of 1996 and also perform a detailed study of their cycle 5 fuel failures for determination of its cause.

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In terms of major plant modifications, a new high pressure turbine rotating element, new bypass valves (to maintain 100 percent bypass capacity) and new turbine inlet valves will be necessary to support the power uprate. Additional BOP evaluations will be needed before reaching 3600 MWt.

According to Mr. Meyer, a final safety evaluation report should be issued by the end of 1995. The HSK has provided a copy of the draft safety evaluation report (proprietary) to the staff for its use. The staff is in the process of getting this report translated into English.

* see previous concurrences

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