New Hampshire
Yankee

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Senior Vice President and
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NYN-90052

March 2, 1990

United States Nuclear Regulatory Commission
Washington, DC 20555

Attention: Document Control Desk

References: Facility Operating License NPF-67, Docket No. 50-443

Subject: Secondary Chemistry Annual Report

Gentlemen:

Enclosed is the Seabrook Station Secondary Chemistry Annual Report. This report summarizes and evaluates the 1989 condensate, feedwater, and steam generator water chemistry operating experience and reports the total time secondary water chemistry parameters were out of specification.

Should you have any questions regarding this report, please contact Mr. Richard R. Belanger at (603) 474-9521, extension 4048.

Very truly yours,

Ted C. Feigenbaum

Enclosure

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New Hampshire Yankee
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Enclosure to NYN-90052

SECONDARY CHEMISTRY ANNUAL REPORT

Secondary Chemistry Annual Report

STEAM GENERATORS

The steam generators were in wet lay up from January 1 to May 23, at which point they were drained and refilled. There were no parameters out of specification during this period. During the next approximately 40 days, hydrazine and ammonia were fed to the steam generators using SKD-91 (the wet lay up chemical addition point). This period encompassed five percent power testing of the plant. Blowdown was not in service immediately before and during these excursions due to testing of the emergency feedwater system. This lack of continuous blowdown during heat up and testing allowed chloride contaminants to build-up, resulting in the following out of specification conditions:

- A total of 75.7. hours out of specification for chlorides on Steam Generator 'B'. Peak chloride concentration was 139 ppb.

- A total of 27.7 hours out of specification for chlorides on Steam Generator 'C'. Peak chloride concentration was 102 ppb.

Subsequent to this lack of blowdown, an intermittent blowdown routine reduced generator chloride levels to between 20 and 80 ppb.

During the first week in July the steam generators were placed back into wet lay up, and were in that condition for the remainder of the year, with no out of specification hours on samples.

During the course of 1989 there were several periods of time during which the steam generators either had no recirculation or had no nitrogen blanket contrary to the requirements of the wet lay up condition. This was caused by a frozen seal water line to the wet layup pump, emergency feedwater valve work, feedwater valve work, and main steam valve work, as well as the performance of integrated leak rate testing.

- A total of 1552 hours with no nitrogen blanket and 1509 hours with no recirculation was accumulated on Steam Generator 'A'.

- A total of 1288 hours with no nitrogen blanket and 1221 hours with no recirculation was accumulated on Steam Generator 'B'.

- A total of 856 hours with no nitrogen blanket and 981 hours with no recirculation was accumulated on Steam Generator 'C'.

- A total of 928 hours with not nitrogen blanket and 1245 hours with no recirculation was accumulated on Steam Generator 'D'.

CONDENSATE AND FEEDWATER

The condensate and feedwater train, up to feedwater heater 26, were on wet lay up recirculation from January through the end of March. The chemistry was controlled using hydrazine at concentrations of >5 ppm.

Between April 1st and 19th no recirculation was done in anticipation of receipt of a low power license. The recirculation was restarted and continued through May 9, when condensate clean-up operations including deoxygenation/demineralization began prior to feeding water forward to the steam generators.

The table below summarizes the range of values on the condensate and feedwater chemical parameters:

	pH	Oxygen ppb	Cation Conduct.	Chloride (ppb)	Iron (ppb)	Copper (ppb)	Sodium (ppb)
Condensate	8.0-9.6	<5	0.06-0.90	<1-8.6	8.7	<1	<1-12
Feedwater	6.6-10.1	<5-100	0.4 to >10	<1	14-19	1-2	<12

Following low power testing in June, the condensate/feedwater system was again put on wet lay up recirculation until November, when it was drained for work on feedwater heaters 21, 22, and 25. The condensers were refilled on December 22 in preparation for Power Ascension Testing. On December 23, the demineralizer trailers were put in service to commence clean-up.