



Carolina Power & Light Company

MAY 08 1991

SERIAL: NLS-91-102

United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
NPDES PERMIT NONCOMPLIANCE

Gentlemen:

By letter dated April 26, 1983, Carolina Power & Light Company (CP&L) agreed to provide the NRC with copies of changes and/or violations to the National Pollutant Discharge Elimination System (NPDES) permit requiring notification to the permit agency.

In order to complete your records for 1990, CP&L is providing the enclosed information regarding NPDES permit noncompliance which was reported to the permit agency for the months of April, May, June, July, September, and October 1990.

Yours very truly,

for S. D. Floyd
Manager
Nuclear Licensing Section

DJK/jbw (.068BNP)

Enclosure

cc: Mr. S. D. Ebnetter
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BRUNSWICK STEAM ELECTRIC PLANT
NPDES REPORT FOR APRIL 1990

FINE MESH SCREEN NONCOMPLIANCE

Units 1 and 2 experienced difficulties with fine mesh screens during the month which prevented the operation of three fine mesh screens per unit while operating three or more circulating water pumps, as required by the permit. These incidents were discussed by telephone with Mr. Ted Bush of the Wilmington Regional office. CP&L personnel plan to meet with the Wilmington Regional office to discuss further the fine mesh screen difficulties.

Incident 1

Unit 1 operated with one coarse mesh and two fine mesh screened circulating water intake pumps from April 11 - 12, as described below:

At 0618 on April 11, the 1A circulating water intake pump (CWIP) with coarse mesh screens was placed in service to allow for preventative maintenance on the 1B CWIP. At 0620 on April 11, the 1B CWIP was shut down. At 0621, the 1C and 1D CWIPs tripped due to high differential pressure. The 1D CWIP was returned to service at 0714 on April 11. The 1C CWIP was returned to service at 0740 on April 11, after removing 20 of the 150 fine mesh screen panels to allow unit operation without a high differential pressure trip. At 2323 on April 11, the 1B CWIP was returned to service following preventative maintenance and the 1C CWIP was shut down to replace the fine mesh screen panels. After replacement of the 20 fine mesh screen panels, the 1C CWIP was restarted at 2343 on April 12, and the 1A CWIP with coarse mesh screens was shut down.

Incident 2

Unit 2 operated from April 26 to May 3 with one coarse mesh and two fine mesh screened CWIPs in service. Unit 1 operated with less than three fine mesh screened CWIPs on April 26. These incidents are described below:

At 0043 on April 26, the 2A CWIP tripped on high differential pressure, followed by the 1D CWIP at 0045 and the 1C CWIP at 0046. This left each unit with one coarse mesh screened CWIP and one fine mesh screened CWIP operating. The 2B CWIP on Unit 2 was out of service for preventative maintenance at the time. The fine mesh screens were removed from the 2B pump before attempting to restart it. The 2C CWIP with coarse mesh screens was placed in service.

At 0747 on the same day the 2A CWIP was restarted leaving Unit 2 with two fine mesh screened and one coarse mesh screened pumps in service with one coarse mesh screened pump in standby. At 0915 the 1D CWIP was started followed by the 1C CWIP at 1041. The 1A CWIP was shut down at 1045 leaving three fine mesh screened CWIPs on Unit 1.

At 0154 on April 27, the 2A pump tripped on high differential pressure. At 0901, the 2A pump was returned to service.

BRUNSWICK STEAM ELECTRIC PLANT
NPDES REPORT FOR APRIL 1990

At 1055 on April 28, the 2B pump, now with coarse mesh screens, was placed in service and the 2C CWIP was shut down to change the screens to fine mesh. At 0205 on May 3, the 2C CWIP with fine mesh screens was started and the 2B CWIP was shut down. This left Unit 2 with three fine mesh screened CWIPs in service.

The cause of the high differential pressure pump trips is believed to be caused by screen clogging from sea lettuce and/or partially decayed salt marsh vegetation (detritus), which is carried into the intake canal during lunar high tides. This detritus settles into the bottom of the intake canal where it can be stirred up and carried into the intake screens during lunar low tidal conditions, or a falling tide. Also, the detritus may be stirred up due to backflow when a CWIP is shut down.

BRUNSWICK STEAM ELECTRIC PLANT
NPDES REPORT FOR MAY 1990

FINE MESH SCREEN NONCOMPLIANCE

Unit 2 experienced difficulties with fine mesh screens during the month which prevented the operation of three fine mesh screens while operating three or more circulating water pumps as required by the permit. These events are described below.

Unit 2 operated from April 26 to May 3 with one coarse mesh and two fine mesh screened Circulating Water Intake Pumps (CWIPs) in service.

At 0043 on April 26, the 2A CWIP tripped on high differential pressure. This left the unit with one coarse mesh screened CWIP and one fine mesh screened CWIP operating. The 2B CWIP on Unit 2 was out of service for preventative maintenance at the time. The fine mesh screens were removed from the 2B pump before attempting to restart it. The 2C CWIP with coarse mesh screens was placed in service.

At 0747 on the same day, the 2A CWIP was restarted leaving Unit 2 with two fine mesh screened and one coarse mesh screened pumps in service with one coarse mesh screened pump on standby.

At 0154 on April 27, the 2A pump tripped on high differential pressure. At 0901, the 2A pump was returned to service.

At 1055 on April 28, the 2B pump, now with coarse mesh screens, was placed into service; and the 2C CWIP was shut down to change the screens to fine mesh.

At 0205 on May 3, the 2C CWIP with fine mesh screens was started; and the 2B CWIP was shut down. This left Unit 2 with three fine mesh screened CWIPs in service.

There were no problems with fine mesh screens on Unit 1 during the month.

BRUNSWICK STEAM ELECTRIC PLANT
NPDES REPORT FOR JUNE 1990

FINE MESH SCREEN NONCOMPLIANCE

The Brunswick NPDES permit requires the operation of three fine mesh screened pumps if three or more circulating water pumps are in service. On June 12, 1990, Unit 2 operated with two fine mesh screened CWIPs and one coarse mesh screened pump.

At 0203, June 12, 1990, the 2A CWIP tripped due to high differential pressure across the fine mesh screen. The 2B CWIP with 3/8" mesh was started at that time. The cause of the high differential pressure was found to be a broken shear pin on the screen turning motor. The shear pin was replaced; and the 2A fine mesh screened pump was returned to service at 1205, June 12, 1990.

BRUNSWICK STEAM ELECTRIC PLANT
NPDES REPORT FOR JULY 1990

FINE MESH SCREEN NONCOMPLIANCE

During the period of July 23, 1990 to July 26, 1990, Unit 1 of the Brunswick Steam Electric Plant experienced difficulties with fouling of fine mesh screened circulating water intake pumps.

Partially decayed salt marsh vegetation (detritus) that had settled on the bottom of the intake canal was stirred up and carried into the intake screens. The water velocity in the canal was much higher due to lunar low-tide conditions.

The Brunswick Plant's NPDES permit requires the operation of three fine mesh screened circulating water intake pumps (CWIPs) if three or more CWIPs are in service. On July 23, 1990 at 0645, the 1D CWIP tripped due to high differential pressure. One minute later, the 1C CWIP tripped for the same reason. The 1A CWIP without fine mesh screens was started at that time. Due to the increasing differential pressure on the remaining fine mesh screened pump (1B), the decision was made to remove half of the fine mesh screen panels from the 1D pump. This pump was then placed in service. The 1A CWIP was shut down, and the 1C CWIP was put back in service. At this point, the 1D pump with one-half fine mesh screens and the 1B and 1C CWIPs with fine mesh screens were operating.

On July 26, 1990, the 1A CWIP was placed back in service with the 1B and 1C CWIPs, while the fine mesh screen panels were replaced on the 1D CWIP. At 2320, July 26, 1990, the 1D CWIP was started and the 1A CWIP was shut down returning to compliance with the fine mesh screen requirements of the NPDES permit.

BRUNSWICK STEAM ELECTRIC PLANT
NPDES REPORT FOR SEPTEMBER 1990

FINE MESH SCREEN NONCOMPLIANCE

The Brunswick Steam Electric Plant's NPDES permit requires the operation of three fine mesh screened pumps when three or more circulating water intake pumps (CWIPs) are in service. Unit 2 of the Brunswick Plant operated from September 30, 1990 to October 2, 1990, with two fine mesh screened CWIPs and one CWIP with a 3/8" mesh screen.

The Unit 2 reactor scrammed on September 26, 1990. The 2C CWIP tripped when the reactor scrammed. The reactor came back on-line on September 30, 1990, but the 2C CWIP required examination and was not available for use. The 2B CWIP was placed in service on September 30, 1990, with a 3/8" mesh screen. The 2C CWIP was returned to service on October 2, 1990, after it was determined there was no damage to the pump and motor due to the pump trip.

BRUNSWICK STEAM ELECTRIC PLANT
NPDES REPORT FOR OCTOBER 1990

FINE MESH SCREEN NONCOMPLIANCE

The Brunswick Steam Electric Plant's NPDES permit requires the operation of three fine mesh screened pumps when three or more circulating water intake pumps (CWIPs) are in service. Unit 2 of the Brunswick Plant operated from September 30, 1990 to October 2, 1990, with two fine mesh screened CWIPs and one CWIP with a 3/8" mesh screen.

The Unit 2 reactor scrammed on September 26, 1990. The 2C CWIP tripped when the reactor scrammed. The reactor came back on-line on September 30, 1990; but the 2C CWIP required examination and was not available for use. The 2B CWIP was placed in service on September 30, 1990, with a 3/8" mesh screen. The 2C CWIP was returned to service on October 2, 1990, after it was determined there was no damage to the pump and motor due to the pump trip.