CP&L

Carolina Power & Light Company

Brunswick Nuclear Project
P. O. Box 10429
Southport, N.C. 28461-0429

FEB 2 4 1992

FILE: B09-13510C

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

BRUNSWICK STEAM ELECTRIC PLANT UNIT 1 & 2
DOCKET NO. 50-325 & 50-324
LICENSE NO. DPR-71 & DPR-62
BRUNSWICK INFORMATION REPORT 1-92-002

Gentlemen:

The following event, while not reportable, was considered of possible interest to the Nuclear Regulatory Commission.

Very truly yours,

J. W. Spencer, General Manager
Brunswick Nuclear Project

cc: Mr. S. D. Ebneter
Mr. N. B. Le
BSEP NRC Resident Office

IE22

During the Unit 2 Reactor Building Roof Vent Monitor (2-CAC-AT-1264) modification acceptance testing, which concluded on 11/19/91, it was determined that considerable system air inleakage was occurring. Differences between the installed photohelic flow indication and a calibrated rotameter indication led to an in-depth investigation of the system's integrity.

The inleakage went undetected because of an apparent manufacturer design deficiency with the Nuclear Measurements Corporation (NMC) Particulate, Iodine, and Gaseous Effluent Monitor (NMC drawing D403200, Rev. D) which did not provide a method for detecting sample chamber seal inleakage. This deficiency was evaluated as not presenting a significant safety hazard and is therefore not reportable per 10CFR21. However, it may impact the data reported to the NRC in the Semi-annual Radioactive Effluent Release Reports. An initial description of the monitor problem will be reported during the Semi-annual Radioactive Effluent Release report, which will be issued prior to March of 1992. A follow-up evaluation will be performed and included with the Semi-annual report due prior to September of 1992.

The modification of the Reactor Building Roof Vent Radiation Monitoring Systems was being performed to permit continuous routine and auxiliary sampling capabilities required to support continuous operation of the reactor building ventilation during surveillance and maintenance activities. This modification was necessary to support Technical Specification continuous monitoring requirements. Surveillance testing requires opening the detector/sample chambers, and maintenance on the detectors or sample pumps breeches the integrity of the auxiliary sampling flow path (see figure 1) and disrupts the required continuous monitoring.

The modification relocated the photohelic flow sensing orifice (see figure 2) and added 4 auxiliary sample pump connecting points. This made it possible, for the first time, to identify an inleakage problem associated with the detector/sample chamber seals. It was also noted that the installed sample pumps had non-sealed shafts that would not prevent communication between the surrounding atmosphere and the reactor building ventilation sample. Prior to the modification, the Unit 2 sample pump could not be isolated from the suction of the auxiliary sample pump. This resulted in additional flow from pump shaft inleakage that could not be sensed by the installed flow photohelic.

The modification has resulted in Unit 2 having the new piping configuration with the remaining (noble gas) detector chamber sealed with a silicon sealant. The original Iodine and Particulate sample chambers were replaced with new filter chambers. Elimination of the inleakage created a condition where the sample flow previously used (3 scfm) could not be obtained even when subjecting the system to considerable vacuum (greater than 10 inches Hg). The existing sample pump could not pull an appreciable flow through the new system without experiencing pump shaft air inleakage diluting the downstream sample flow. For this reason the installed sample

pump will not be used.

The short term solution is to operate the Unit 2 Reactor Building Roof Vent Monitor at 2 scfm using the auxiliary sample pump. The long term solution will be for a subsequent plant modification to remove the existing sample pumps from both units and install sealed shaft sample pumps (or equivalent) capable of maintaining a desired sample flow rate and provide indication of seal failure.

The Unit 1 Reactor Building Roof Vent Monitor is scheduled to be modified by the end of the next refuel outage (fall 1992). In the interim, the auxiliary sample pump is currently being used in a configuration that maintains Technical Specification required monitoring capabilities (see figure 3).

Figure 1

PRE-MODIFICATION MONITOR CONFIGURATION

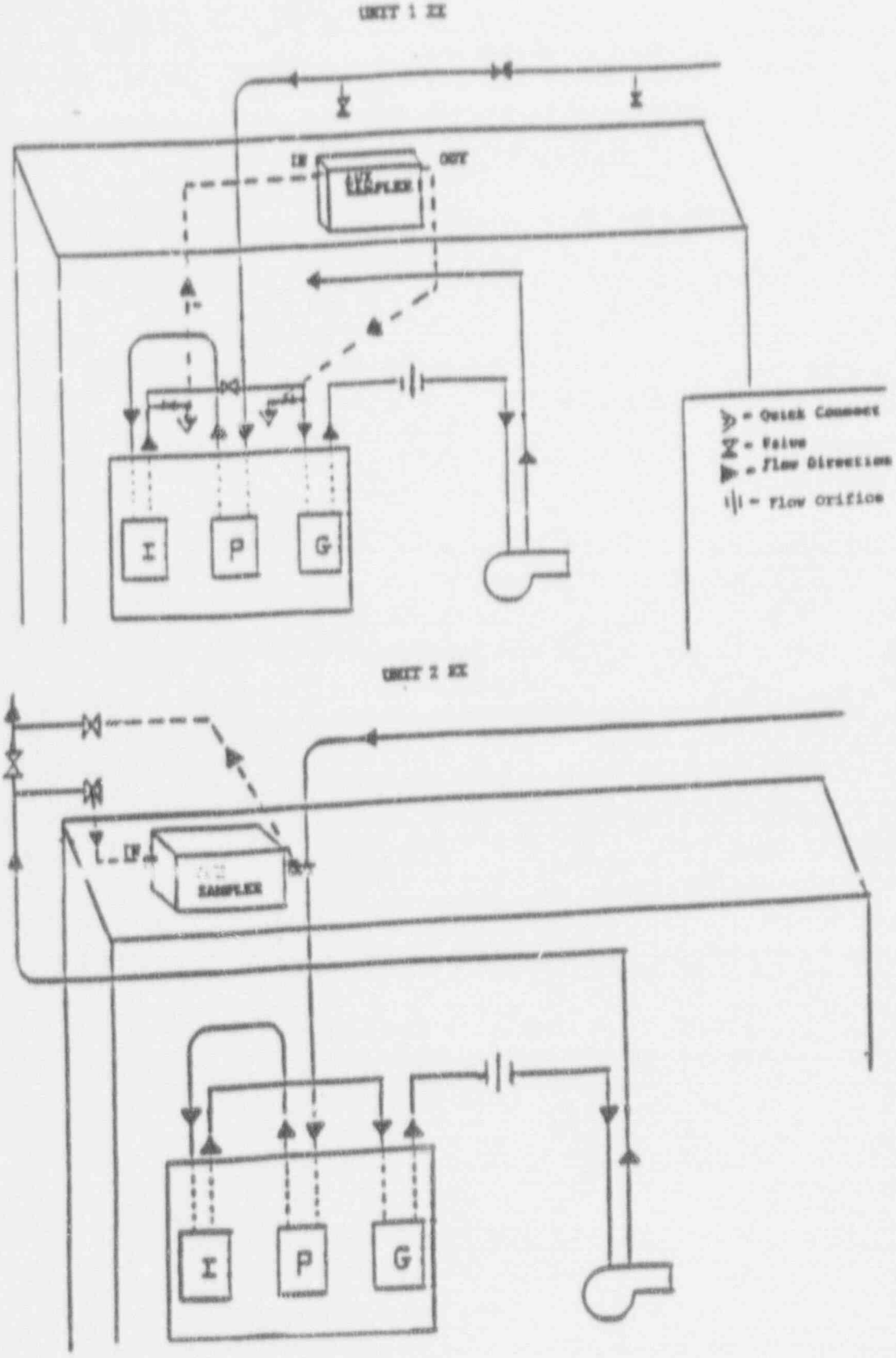

Figure 2

POST-MODIFICATION MONITOR CONFIGURATION

Alternate Auxilary Sampler Connections on NMCs

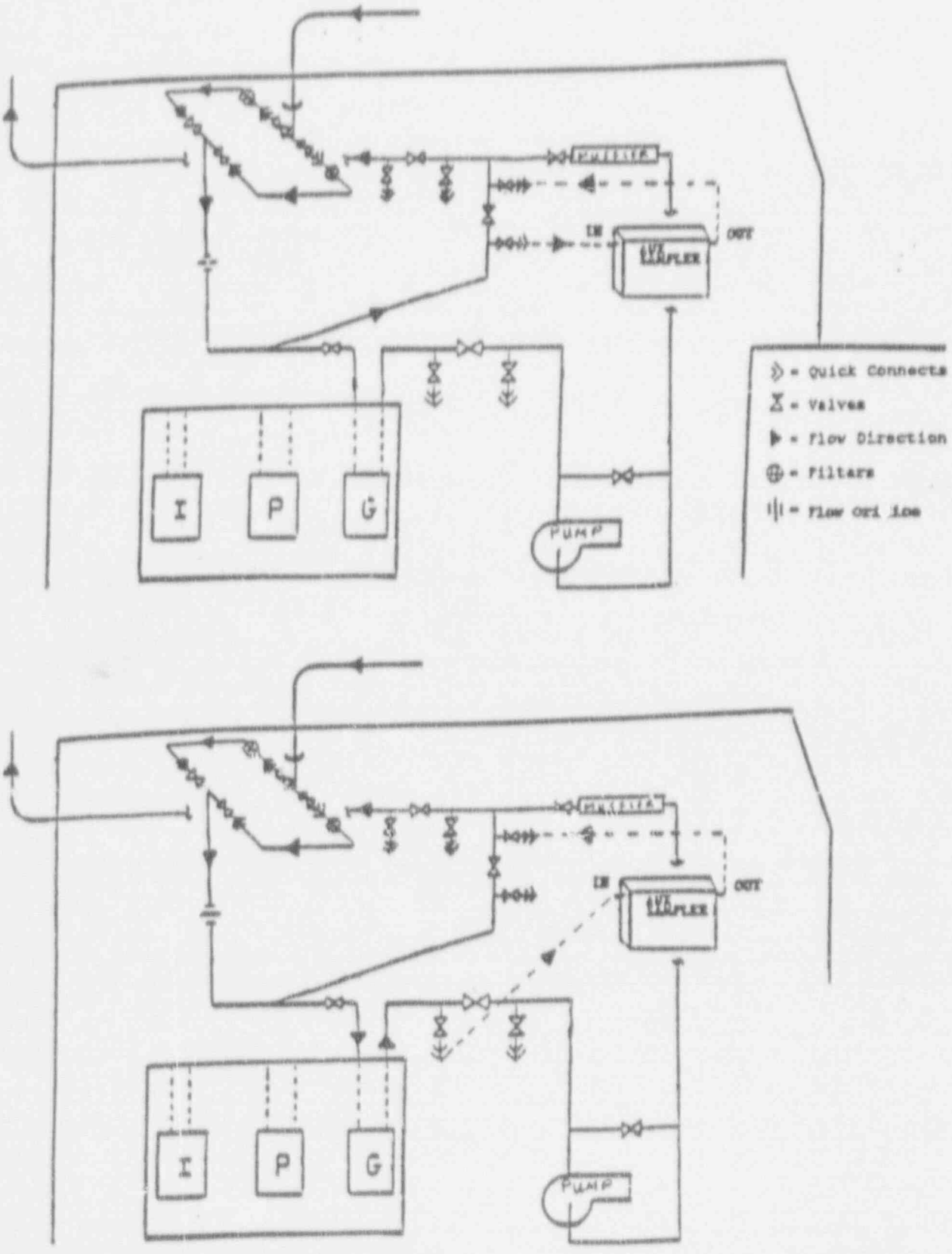

Figure 3

UNIT 1 INTERIM MONITOR CONFIGURATION