Date: 2/15/83

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
COMMONWEALTH EDISON COMPANY	)	Docket Nos. STN 50-454 OL
	)	STN 50-455 OL
(Byron Nuclear Power Station, Units 1 and 2)	)	

SUMMARY OF TESTIMONY OF
RICHARD PLENIEWICZ

Richard Pleniewicz is employed by Commonwealth Edison Company as the Assistant Superintendent of Operations at the Byron Station and, as such, he is responsible for procedures associated with plant operation. His testimony explains the actions which are being taken by Commonwealth Edison Company to implement the recommendations made by Westinghouse for minimizing the occurrence of a KRSKO-type waterhammer event which is the subject of DAARE/SAFE Contention 9a.

Mr. Pleniewicz confirms Commonwealth Edison Company's plan for changes in the check valve arrangement in the Feedwater Bypass System and the Auxiliary Feedwater System. He also relates the actions which are being taken to implement the Westinghouse recommendations. Mr. Pleniewicz also describes the preoperational testing which will occur at the Byron Station to test for conditions which can lead to a KRSKO-type event. He concludes that the actions which will be taken will implement all of Westinghouse's recommendations.

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TESTIMONY OF RICHARD PLENIEWICZ

Q1: Please state your name, present occupation, and present position.

A1: My name is Richard Pleniewicz. I am employed by Commonwealth Edison Company as Assistant Superintendent of Operations at the Byron Nuclear Power Station near Byron, Illinois.

Q2: Briefly state your educational and professional qualifications.

A2: I have a Bachelor's Degree in Electrical Engineering from the University of Illinois at Champaign-Urbana. I also received a Senior Reactor Operator's License for Zion Station Units 1 and 2 in July, 1976. My work experience prior to joining Commonwealth Edison includes 6 years in the United States Navy. As the result of my training I became a Qualified Reactor Operator in 1966. I joined Commonwealth Edison in February, 1973 as a Technical Staff Engineer at Zion Station. I was an active member of the

pre-operational and startup test group. In that capacity I was involved in core physics testing and plant-wide transient testing. In September, 1974, I became the Electrical Group Leader. After receiving my Senior Reactor Operator's License, I was appointed to the position of Shift Foreman at Zion Station. In May, 1977, I was promoted to Operating Engineer at the Byron Station. In August, 1980, I was promoted to Assistant Superintendent of Operations at the Byron Station.

Q3: Describe your duties and responsibilities as Assistant Superintendent of Operations.

A3: As Assistant Superintendent of Operations, my basic function is to manage the Station's Operating Department. This entails ensuring that the plant is operated in a safe, efficient and professional manner in accordance with State and Federal regulations, permits and licenses. It also includes providing direction to the Shift Engineer for safe and reliable operation by means of instruction, procedures and policies. I am also a member of the On-Site Review Committee which is responsible for reviewing plant operating procedures and test results.

Q4: What is the purpose of your testimony?

A4: The purpose of my testimony is to explain the actions which are being taken by Commonwealth Edison Company to implement the Westinghouse recommendations for minimizing

the occurrence of a waterhammer event in the steam generator bypass line at the Byron Plant like the one that occurred at the KRSKO plant.

Q5: As Assistant Superintendent of Operations are you responsible for writing the procedures associated with the operation of the feedwater bypass system?

A5: Yes.

Q6: Please describe Commonwealth Edison Company's plan for removal and installation of check valves from the Feedwater Bypass System and the Auxiliary Bypass System?

A6: Edison plans to remove the check valve which is presently located on the bypass piping adjacent to the auxiliary nozzle on each of the four steam generators. This valve will be removed prior to the start of Hot Functional Testing.

Edison plans to install a check valve on each of the two pump discharge lines of the Auxiliary Feedwater System upstream of the point where the Auxiliary Feedwater System branches out into the individual pipes that supply the steam generators. These valves will be installed also prior to the start of Hot Functional Testing.

Q7: Are you familiar with the recommendations made by Westinghouse Electric Corporation in regard to prevention of a KRSKO-type waterhammer event?

A7: Yes.

Q8: Does Commonwealth Edison Company propose to implement Westinghouse's recommendations?

A8: Yes. Westinghouse's first recommendation states:

> Temperature sensors should be installed on the bypass piping close to the auxiliary nozzle to detect backleakage of hot water or steam.

To implement this recommendation, Edison plans to install temperature sensors on the feedwater bypass piping adjacent to the auxiliary feedwater nozzle on each of the steam generators at the Byron Station. These sensors will detect backleakage of steam or hot water into the bypass piping by sensing any increase in temperature. The temperature sensors will feed information to the plant process computer which will be programmed to alarm when an abnormally high temperature is detected in the bypass piping. This alarm will alert the reactor operator of the potential conditions for the occurrence of a waterhammer.

The temperature sensors will be in place and the plant program computer will be programmed as stated above by the fuel load date. If the sensors are not in place by the time of Hot Functional Testing, we propose to install sensors at the previously indicated locations and monitor them either locally or in the control room via temporary wiring, if necessary.

Westinghouse's second recommendation states:

> If backleakage is detected, the piping should be slowly refilled or the plant brought to a cold shutdown condition, depending on the circumstances. An analytical study performed by the Westinghouse R & D Center shows that the bypass piping can be slowly refilled safely. The recommended flowrate is on the order of 15 gpm.

To implement this recommendation, my department is developing procedures which will instruct the reactor operator, if the temperature monitoring system indicates backleakage, to slowly purge the bypass piping of the steam or hot water by introducing feedwater into the bypass piping through the tempering line at a flow rate as close as possible to the 15 gpm recommended by Westinghouse. The low flow rate would be continued until the temperature sensors indicate a return to normal conditions in the bypass piping. At that point, the reactor operator will be instructed to maintain a continuous flow while determining the cause of the temperature monitoring system alarm. After the cause is identified, we would initiate any necessary repairs, which could entail shutting down the unit.

It should be pointed out that during power operation, there will be a continuous feedwater flow through the auxiliary nozzle. Below approximately 20 percent of full power operation, this flow is through the feedwater bypass system. From 20 to 100 percent of full power operation the feedwater flow enters the steam generator through the lower main nozzle. However, a tempering flow is maintained through the auxiliary nozzle at those power levels. The tempering flow maintains

the auxiliary nozzle at feedwater temperatures and thus reduces the induced thermal stresses when the feedwater is transferred from the main to auxiliary nozzles during plant unloading. The continuous flow of water through the auxiliary nozzle from the tempering flow or the feedwater bypass system makes backleakage of steam into the bypass piping during power operation very unlikely. However, if for some reason the continuous flow through the auxiliary nozzle is interrupted, operating procedures will instruct the reactor operator to monitor the temperature monitoring system prior to reestablishing the flow. If a high temperature is indicated, the reactor operator will be instructed to purge the bypass piping at the recommended slow rate and investigate the cause of the high temperature and initiate any needed repairs.

Westinghouse's third recommendation states:

> The steam generator water level should be maintained above the auxiliary nozzle discharge pipe as much as possible so that if backleakage does occur, water and not steam will leak back into the pipe.

Prior to this recommendation, the steam generator water level was established at a level above the auxiliary nozzle discharge pipe. Therefore, it is not necessary to make any changes to accommodate this recommendation. This water level will be maintained during all normal operating conditions. However, during a turbine trip/reactor trip, the steam generator water level could fall below the auxiliary nozzle discharge pipe. These trips are infrequent and not likely

to coincide with a loss of flow through the auxiliary nozzle and excessive backleakage through the check valves.

Westinghouse's fourth and final recommendation states:

> The Auxiliary Feedwater System check valves should be maintained to minimize backleakage.

To implement this recommendation, the Maintenance Department at Byron Station has agreed to establish a regular schedule for testing the check valves for backleakage. The check valves will also be checked and repaired, if necessary, if excessive backleakage is detected in the bypass piping by the temperature monitoring system.

Q9: What preoperational testing does Commonwealth Edison Company plan to test for backleakage in the bypass piping?

A9: Prior to Hot Functional Testing, all check valves which are intended to prevent backleakage into the Auxiliary Feedwater System will be individually tested for excessive backleakage. During the Hot Functional Testing, we will test the ability of the tempering flow system to achieve the low flow rate recommended by Westinghouse for refilling of the bypass piping. Also during Hot Functional Testing, we will stop all feedwater flow into the steam generator and then monitor the bypass piping temperature for indication of backleakage.

Q10: Will the foregoing actions that you have described implement all of Westinghouse's recommendations

for minimizing the occurrence of a waterhammer in the feedwater bypass piping?

A10: Yes.