The turbine main condenser is normally available. The emergency cooling system (Section V-E*) is provided as a redundant backup for core decay heat removal following reactor isolation and scram. One emergency condenser system has a heat removal capacity at normal pressure of 19.0 X 10^7 Btu/hr, which is approximately three percent of maximum reactor steam flow. This capacity is sufficient to handle the decay heat production at 100 seconds following a scram. If only one of the emergency cooling systems is available, 2000 pounds of water will be lost from the reactor vessel through the relief valves in the 100 seconds following isolation and scram. This represents a minor loss relative to the vessel inventory of about 450,000 pounds (Section V-E.3.1*).

The required heat removal capability is based on the data of Table V-1* adjusted to normal operating pressures. The only difference is manual system initiation rather than automatic initiation.

The system may be manually initiated at any time. The system is automatically initiated on high reactor pressure in excess of 1080 psig sustained for 12 seconds. The time delay is provided to prevent unnecessary actuation of the system during anticipated turbine trips (Appendix E-I.3.13*). Automatic initiation is provided to minimize the coolant loss following isolation from the main condenser.** To assist in depressurization for small line breaks the system is initiated on low-low reactor water level five feet (5 inches indicator scale) below the minimum normal water level (Elevation 302'9") sustained for 12 seconds. The timers for initiation of the emergency condensers will be set at 12 seconds delay based on the analysis (Appendix E-I.3.13*). The MSIV closure analysis (Appendix E-I.3.8*) assumes that the emergency condensers do not initiate for 15 seconds.

The initial water volume in each emergency condenser is 21,360 ± 1500 gallons which keeps the level within ± 6 inches of the normal water level. About 72,000 gallons are available from the two gravity feed condensate storage tanks. To assure this gallonage, a level check shall be done at least once per day.

This is sufficient to provide about eight hours of continuous system operation. This time is sufficient to restore additional heat sinks or pump makeup water from the two-200,000 gallon condensate storage tanks. The fire protection is also available as a makeup water supply.

* FSAR
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a. The set points included in the tables are those used in the transient analysis and the accident analysis. The high flow set point for the main steam line is 105 psi differential. This represents a flow of approximately 4.4 X 10^6 lb/hr. The high flow set point for the emergency cooling system supply line is $\leq$ 11.5 psi differential. This represents a flow of approximately 9.8 X 10^5 lb/hr at rated conditions.

Normal background for the main steam line radiation monitors is defined as the radiation level which exists in the vicinity of main steam lines after 1 hour or more of sustained full rated power. The dose rate at the monitor due to activity from the control rod drop accident of Appendix E or from gross failure of one rod with complete fission product release from the rod would exceed the normal background at the monitor. The automatic initiation signals for the emergency cooling systems have to be sustained for more than 12 seconds to cause opening of the return valves. If the signals last for less than 12 seconds, the emergency cooling system operating will not be automatically initiated.

The high level in the scram discharge volume is provided to assure that there is still sufficient free volume in the discharge system to receive the control rod drives discharge. Following a scram, bypassing is permitted to allow draining of the discharge volume and resetting of the reactor protection system relays. Since all control rods are completely inserted following a scram and since the bypass of this particular scram initiates a control rod block, it is permissible to bypass this scram function. The scram trip associated with the shutdown position of the mode switch can be reset after 10 seconds.

The condenser low vacuum, low-low vacuum and the main steam line isolation valve position signals are bypassed in the startup and refuel positions of the reactor mode switch when the reactor pressure is less than 600 psig. These are bypassed to allow warmup of the main steam lines and a heat sink during startup.

ATTACHMENT B

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT UNIT 1
DOCKET NO. 50-220
LICENSE NO. DPR-63

Supporting Information for Technical Specification Bases Change

The proposed change to the Technical Specification Bases for Sections 3.1.3 and 4.1.3, and Sections 3.6.2 and 4.6.2, increases the setpoint for the Emergency Cooling System (ECS) automatic initiation time delay from 10 seconds to 12 seconds. This is intended to provide a greater margin for preventing unnecessary actuation of the ECS during anticipated turbine trips. The ECS provides decay heat removal from the reactor fuel in the event that reactor feedwater capability is lost and the main condenser is not available. The ECS is also used to assist in depressurization for small line breaks. Automatic operation of the ECS is initiated by high reactor pressure (in excess of 1080 psig) and on low-low reactor water level (5 inches indicator scale).

The purpose of the time delay is to prevent unnecessary actuation of the ECS during anticipated turbine trips (Turbine Trip with Partial Bypass). This is accomplished by delaying the actuation signal until reactor pressure exceeds 1080 psig for a set time interval. This interval (10 seconds in the current Bases) was obtained from FSAR Appendix E, Section I.3.13 (analysis for a turbine trip with partial bypass) which states that "the vessel pressure exceeds the trip point for the ECS actuation for only approximately 6.6 seconds. Thus, from this analysis, a time delay of 10 seconds is set for the emergency cooling system to prevent its actuation in this instance". The upper limit for the setpoint (15 seconds, as stated on current Bases page 49) was determined from FSAR Appendix E Section I.3.8, "Main Steam Line Isolation Valve Closure", which states that "the analysis assumes that the valve in the discharge line of the ECS begins to open about 15 seconds later and that significantly measurable steam flow through the condenser system occurs at around 23 seconds." Therefore, the setpoint limit of 15 seconds cannot be exceeded since it is the limit used in the MSIV closure analysis.

The proposed setpoint of 12 seconds has been evaluated with respect to the effects of calibration uncertainties, instrument drift, and loop accuracies. This evaluation concluded that the setpoint of 12 seconds will not exceed the upper or lower safety limits.

The proposed setpoint of 12 seconds is bounded on both the high and low ends by accidents analyzed in the FSAR and as described on Bases page 49. Therefore, this proposed change does not impact any safety analysis, nor will it increase the probability of occurrence of an accident previously analyzed or reduce the margin of safety as defined in the Bases to the Technical Specifications. Since the purpose of the time delay is not being changed, merely a small increase is being made in the delay time of ECS actuation (which is enveloped by the MSIV closure analysis) then the proposed change will not create the potential for a new accident or malfunction than currently analyzed in the FSAR.

Therefore, this proposed change does not create a safety issue and does not affect the public health and safety.

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