

September 14, 2001

Mr. Michael J. Mulligan
P.O. Box 161
Hinsdale, NH 03451

Dear Mr. Mulligan:

This letter responds to your e-mail dated June 21, 2001, to Mr. Victor L. Dricks at the U.S. Nuclear Regulatory Commission (NRC) regarding your safety concerns with large remotely controlled relief valves. This letter also provides our assessment of the safety significance of these concerns.

We understand that your concerns involve the maintenance on, and leakage of, primary system safety and relief valves (SRVs) in both pressurized water reactors (PWRs) and boiling water reactors (BWRs). Specifically, you expressed concern about leaking SRVs at the Limerick Generating Station, and a recent event involving the inadvertent lifting of an SRV that occurred as Limerick Unit 2 was performing a planned shutdown to make SRV repairs. You stated that the Limerick SRV experience is indicative of a large magnitude increase in SRV problems at nuclear plants. You questioned whether or not SRV maintenance intervals may be too long considering that nuclear plants now run for as long as 24 months between refueling outages. You asked what would happen if an SRV outlet flange failed and discharged steam directly into the drywell. You stated that an NRC inspection report covered up serious control room command and control deficiencies during the recent shutdown of both Limerick units.

The recent Limerick event, involving an SRV that inadvertently lifted and remained open, occurred as the licensee was shutting down Unit 2 to repair an SRV which was known to have pilot valve seat leakage which was being monitored by the licensee. This event was documented in Licensee Event Report (LER) 50-353/01-001-00 and in NRC Inspection Report 05000352/2001-003, 05000353/2001-003. During the Unit 2 shutdown, the licensee replaced two SRVs - one because of pilot valve seat leakage and the other because of main seat leakage. The licensee also revised its SRV leakage determination monitoring process and conducted extensive testing and failure analyses of the SRV first stage pilot valve. The NRC staff is evaluating the appropriateness of the licensee's corrective actions. The conclusions from the staff's evaluation will be documented in a future Limerick resident inspectors' routine inspection report. NRC inspection reports are available in the NRC Public Document Room or from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html>.

You stated that there has been a large magnitude increase in SRV problems at nuclear power plants. The NRC staff has determined that the Boiling Water Reactor (BWR) Owners Group and the individual licensees have significantly improved the performance of three-stage SRVs (similar to those in service at Limerick) and two-stage SRVs as demonstrated by plant-specific operational experience and test data. Operational experience also indicates that there have been fewer problems associated with SRV performance at BWRs which use SRV designs other than two-stage and three-stage SRVs and at PWRs. Therefore, the NRC staff does not believe that there is a serious generic problem regarding SRVs. Regarding the most recent SRV event at Limerick, the NRC staff is evaluating the risk significance of that event using NRC Inspection Manual Chapter 0609, Significance Determination Process. Upon completion of that evaluation

by the NRC staff, any risk determinations will be documented in a Limerick resident inspectors' routine inspection report

Concerning your question regarding 24-month maintenance intervals, the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (the Code) requires that at least some number of SRVs be tested no less frequently than every 24 months. The ASME Code also requires that when SRVs fail setpoint tests, additional SRVs must be tested, which effectively increases the frequency at which SRVs are tested. The ASME Code also requires that SRVs be periodically tested for seat leakage. Additionally, safety-related components, such as SRVs, are within the scope of the Maintenance Rule (10 CFR 50.65). The Maintenance Rule requires that licensees monitor the performance or condition of components, such as SRVs, against licensee-established goals commensurate with safety, taking into account industry-wide operating experience. Licensees must take corrective action when these goals are not met. The NRC staff considers the current requirements adequate to ensure that SRVs are monitored and maintained in a condition that ensures they will perform their safety functions.

You described the consequences of a hypothetical scenario involving failure of a BWR SRV flange that results in the discharge of steam directly into the drywell. In the unlikely event that an SRV discharge flange were to fail and discharge steam directly into the drywell rather than the suppression pool, steam would pressurize the drywell by an amount sufficient to overcome the static water head in the suppression pool downcomer. The steam would then be directed into the suppression pool. This type of event is bounded by the current licensing basis for nuclear power plants, thus ensuring safety is maintained.

Finally, you expressed a concern that serious control room command and control deficiencies at Limerick were covered-up in an NRC Inspection Report. The NRC Reactor Oversight Process (ROP) requires that inspectors evaluate licensee personnel performance during non-routine evolutions and events. NRC inspectors conducted such an evaluation, documented in NRC Inspection Report 05000352/2001-003, 05000353/2001-003, and identified no significant findings regarding personnel performance during the recent Limerick SRV inadvertent opening event. Nevertheless, we have forwarded a copy of your e-mail to the NRC Office of the Inspector General for whatever action they consider appropriate.

In conclusion, neither the NRC staff's evaluation of your concerns, nor industry operational data, indicate that the currently installed SRVs pose an unacceptable risk to the health and safety of the public. We hope that the above explanation is helpful. Thank you for informing us of your concerns. Should you have any additional questions, or if we can be of further assistance in this matter, please call me at 301-415-1055.

Sincerely,

/RA R. Starkey for/

Christopher Gratton, Sr. Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Enclosure: E-mail dated June 21, 2001

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