





**Figure 1**  
**Criticality Alarm Circuit**

The licensee determined that the reason for the incorrect signal readout was that the data acquisition module for that circuit had originally been configured with a jumper that incorporated a 10 kHz filter. The previous software controlling the data acquisition module had instructions to slow the channel scan to allow an interchannel delay which allowed the signals time to settle so that correct readouts were received at the monitoring console. The upgraded software eliminated the interchannel delay and the resulting signal was unstable with the readout significantly less than the actual source. The other circuit was unaffected because the filtering had never been enabled.

NRC is concerned about the resulting event because the licensee criticality alarm maintenance procedure allows the criticality horns to be silenced during maintenance in which case the licensee relies on physical observation of the monitoring signal at the alarm console in the guard station. When the alarm maintenance procedure is in effect, a signal for a criticality alarm could be manually broadcast on the licensee public address system based on the observer's conclusion about the panel indication. An incorrect monitoring signal would be a problem if an actual criticality event occurred with the horns silenced since it could be misinterpreted as not meeting the threshold to manually announce the alarm.

## DISCUSSION

The monitoring signal in the licensee criticality accident alarm system was important to safety because, during maintenance operations capable of causing a false criticality alarm, the affected horns were silenced and an operator was assigned to observe the main guard station panel. Reliance on visual indications for criticality alarm monitoring during maintenance operations with the horns silenced is a common procedure at NRC-licensed fuel cycle facilities.

NRC is concerned about adequate configuration of electronic components during initial installation in safety system or safety-related applications. In some cases, as shown in the above situation, the configuration problem may not be detected for years due to a subsequent change or other circumstance. NRC expects that licensee management measures will assure proper initial configuration of electronic components.

NRC requires management measures at fuel cycle licensees to maintain consistency between design requirements, the physical configuration, and the facility documentation. Failure to adequately configure electronic components prior to operation of a safety system or equipment can result in failure to establish necessary controls or compromise of established controls. NRC safety inspections routinely review licensee management measures to determine how well they ensure the availability and reliability of IROFS. These inspections include review of licensee change management procedures to ensure that analytical assumptions are not compromised during or after implementation. Vendor specifications for electronic component configuration might be inspected during an operational readiness review.

## CONTACT

This information notice requires no specific action, nor written response. If you have any questions about the information in this notice, please contact the technical contact listed below.

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