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SUBJECT: SETPOINT DRIFT OCCURRENCES FOR THE BARTON MODEL 288 INSTRUMENT

During the initial screening reviews of Licensee Event Reports received during the past four months, we have observed that a number of these were due to setpoint drift of the subject instrument. As a result of this observation, the plant systems unit conducted a search of Licensee Event Reports to determine if information or patterns could be discerned for these devices. The data search for these devices covered the five year period of 1976 through 1980. Based on the review of the information obtained for this search, the following findings were established:

1. The search contained a total of twenty-two plants which reported setpoint drifting occurrences for the subject devices. Of this total number of plants nineteen were boiling water reactors. These plants use these devices to automatically initiate important safety functions such as core spray, containment spray, reactor isolation, condenser isolation and reactor scram.
2. Due to the recurrent setpoint drift problem for these devices, two of the nineteen operating boiling water reactor stations have initiated independent action to include a design review and evaluation of these devices as used in their specific safety applications. Further, until these evaluations are completed these stations have decreased the time period between calibration intervals. At this time, no specific dominant root cause such as improper installation, inadequate calibration procedures and/or environment or inappropriate application of these devices has been determined which would explain the recurrent setpoint drift problem.
3. Based on the number of occurrences contained in the five year search, the rate of these occurrences on a per unit time basis has remained

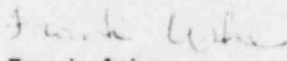
relatively constant. This indicates that the corrective action (re-calibration), does not correct the dominant root cause of the recurrent problem.

We are aware that some of the operating boiling water reactors are changing over to an analog safety sensor system and this action eliminates the use of these devices in this application. However, not all operating boiling water reactors presently plan to change to an analog system. For those that do not and have experienced recurrent setpoint drift problems for these devices, and in view of our findings stated above, the Office of Nuclear Reactor Regulations (NRR) may be provided with the following recommendations for their consideration:

1. Review and revise, as necessary, calibration procedures and techniques to obtain the most accurate instrument setpoints possible;
2. Determine the time frame for sensor drift (e.g., 1 day, 1 week, 1 month) including plots for those instruments which have a tendency to drift;
3. Determine if a more conservative setpoint can be used to account for observed drift; and
4. Conduct testing and correlate results so as to determine the suitability of these devices in plant specific applications.

These recommendations may be implemented through the plant specific technical specifications. In addition, for those applicable operating boiling water reactors which presently plan to change to the analog system, recommendations 1, 2, and 3 may be applied on an interim basis until installation and checkout of the analog systems are completed.

Finally, in lieu of providing NRR with the above recommendations due to insufficient data base, safety significance of the subject issue or other reasons, it is recommended that this item be included on our watch list.


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