Actions from initial Byron tracer test results

A troubleshooting plan is being developed to address the difference between the Byron Unit 1 Venturi reading and the preliminary tracer test results.

Background

- Tracer testing was performed on Byron Units 1&2 on 2/7/04 as part of the AMAG action plan.

- The initial comparison of tracer test results to FW venturi flow measurement indicated the nominal value of venturi flow and tracer test flow were within the combined uncertainty band of the tracer and venturi. Thus, the tracer test validated the venturi. The combined uncertainty band included an ABB estimate of the expected accuracy of the tracer test at the time of the test.

- On February 16, 2004, ABB completed preparation of their uncertainty calculation and provided a letter documenting the tracer test uncertainty indicating the uncertainty was approximately one half of what was initially estimated. The reduced uncertainty of the tracer test resulted in the combined uncertainty band of the tracer and venturi being smaller.

- Based on the revised input from ABB, the venturi measurement of FW flow was no longer validated within the accuracy of the tracer test. The venturi measured FW flow may be non-conservatively lower than the tracer test by 0.63%. (the acceptance band was the venturi nominal value +/-0.55%).

- Byron Unit 2 results were well within uncertainty limits with no immediate actions required. (0.2% tracer greater than venturi)

Troubleshooting

- This comparison is subject to further review using the troubleshooting process by Byron Station and Corporate Engineering. Troubleshooting will address the following potential failure modes.
    - Venturi flow measurement
        - Transmitter calibration
        - Recently documented shift in FW flow on one FW flow transmitter
        - Potential FW venturi bypass flow (FW line cleanup loop)
    - Criteria for FW venturi flow measurement uncertainty
        - Uncertainties included / excluded in uncertainty calculation
        - Uncertainty values used in the analysis
    - Tracer test FW flow test measurement uncertainty
        - Review preliminary report of tracer test uncertainty calculation results
    - A review of all analytical methodologies will be included

- An evaluation of results based on troubleshooting will be performed for extent of condition to Byron 2 and Braidwood 1 and 2.
- The troubleshooting plan will be finalized on 2/17/04

Byron Unit 1 Power reduction

- As a conservative measure, Byron Unit 1 reactor power is being reduced by 0.7% while the troubleshooting described above is being performed.
- No immediate reporting to the NRC is required. NRC reportability will be re-evaluated upon completion of the trouble shooting plan with final test results.