

**Original Due Date:** 11/10/2005

**Ticket Number:** 020050207

**Document Date:**

**NRR Received Date:** 10/06/2005

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**TACs:**

MC8559 MC8560 MC8561

**To:**

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**\*\*\* YELLOW \*\*\***

**For Signature of:**

**Routing:**

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**Description:**

Nuclear Plant Cost Analyst in the Phoenix Office of EL Paso Electric Co.

**Assigned To:**

DRIP

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**Special Instructions:**

Received letter on 10/06/05 undated. DRIP has the lead, copy also to DIPM.

To:  
Director of the Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

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due 11-10-05

From 2000 to 2003, I served as a nuclear plant cost analyst in the Phoenix Office of El Paso Electric Co. The Phoenix Office performs owner-oversight relative to the company's interest in the Palo Verde nuclear plant (PVNGS), including review and Operating Committee approval of the budget. I am a former OMB examiner, later in charge of budget and information resources for the Bonneville Power Administration (i.e., owner of the output of the Columbia Generating Station).

Based on my experience, I think two points are important to nuclear safety:

NRC should have access to and be able to use plant-level budgetary information in carrying out its responsibilities. One reason that operating agreements among part-interest nuclear plant owners generally provide for budget review and approval by the different owners, even if they do not have the operating responsibility, is that the owners, like NRC, share an interest in the safety of the plant. If a plant is unsafe it can impact the bottom line not only directly through liability, but also by adversely affecting plant output and repair costs. Whether staffing, operations and maintenance activities, and capital replacements will be adequate to sustain the plant in a safe and reliable mode in the future depends heavily on the resources planned to be allocated, i.e., the budget and budget projections.

A case in point is the Palo Verde nuclear plant. A stellar performer in the five or so years prior to 2003 in terms of both safety and reliability, the plant has sadly declined. In late 2002-early 2003 Arizona Public Service (APS), the operator of PVNGS, apparently because of corporate cash problems, proposed that the owners adopt a budget and budget projections that provided for drastic cutbacks at PVNGS, particularly for capital replacements and additions. In constant dollars, replacements and additions were projected to go about as low as they had ever been, well below the then-current levels and the well-established trends consistent with the replacement and other requirements of an aging plant and systems. Furthermore, the budgeted and projected levels were below benchmarking data from other nuclear facilities. It looked like a programmed train-wreck to me. Citing the historical, trend and benchmarking data, I attempted to have the budget vetoed by El Paso Electric and the other owners. My attempt included raising the issue with the Operating Committee, but was unsuccessful. It proved impossible to convince co-owners to mandate more spending than the operator maintained was necessary, especially in face of APS's excellent performance up to that time. I am sure that the flawed budget plan played a large part in the development of Palo Verde's present problems. These problems might have been averted or mitigated if there had been early targeted questioning by NRC stimulated by an understanding of the risky budget plan.

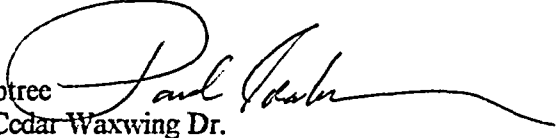
I am **not** advocating that NRC dictate plant budgets or make spending decisions by operators. I am saying that NRC can be alerted to likely safety issues, better target its own assessments, and have better insight into systematic problems by having access to plant level budget information and making use of it internally, and as a source of information for discussing issues with operators. Requiring the submission of actual (past) expenditure data to NRC and using it in part to benchmark over time between plants can also be immensely useful. If NRC determines that it cannot do the analysis of plant budget information because of staff limitations, such analysis can be done by contract.

I think NRC can probably find it has the legal authority to require the submission of plant level budget, staffing, and actual expenditure data by operators. If not, my impression is that a legislative provision to this effect would not be difficult to obtain. It might in part be justified on security grounds, given the importance of nuclear safety and the nuclear industry to the nation.

Plant-level software and hardware development is a potentially serious problem. Nuclear plants are aging. Increasingly information, control and other systems are failing, or becoming incompatible with current technology. Replacement parts and enhancements are difficult to obtain. The number of qualified vendors is decreasing. One reaction to the foregoing at the plant level is to design, develop, manufacture, and test plant-specific replacements and additions using plant personnel and equipment, or using "satellite" contractors—often ex-plant personnel—to do the work. An alternative to this in-house development and deployment of unique plant systems is to emphasize contracting with wider industry for standard systems and adapting them to fit the individual plant as necessary.

My view is that developing nonstandard systems at the plant level risks making them opaque to external review and oversight, not only at the NRC level, but also at different management and organizational levels within the plant. It is equivalent to relying heavily on tribal knowledge. Although these systems are required to be documented and qualified, there is almost always a built-in conflict of interest when the using and specifying unit is also the developer and tester. It keeps more funding and personnel within the unit than would otherwise be the case. In-house development decreases standardization between nuclear plants and even within plants, decreasing learning effects and debugging.

If you would like more information, please do not hesitate to contact me. Although I live in Arizona I am often in the Washington, DC area and would be delighted to discuss these matters further with you or NRC staff personally.

  
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