REGULATORY ANALYSIS

DRAFT REGULATORY GUIDE DG-1268
PREOPERATIONAL TESTING OF INSTRUMENT AND CONTROL AIR SYSTEMS

(Proposed Revision 1 of Regulatory Guide 1.68.3)

Statement of the Problem

The U.S. Nuclear Regulatory Commission (NRC) issued Regulatory Guide (RG)1.68.3, "Preoperational Testing of Instrument and Control Air Systems," in April 1982 to ensure that licensees understood the expectations of the NRC staff for preoperational testing of instrument and control pneumatic systems licensed under the requirements of Title 10 of the *Code of Federal Regulations*, Part 50, "Domestic Licensing of Production and Utilization Facilities" (10 CFR Part 50), before conducting normal operations. Regulatory changes, coupled with experience gained since that time, have resulted in a need to update the guidance.

Objective

The objective of this revision is to provide additional staff guidance to applicants under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," on the development of an acceptable initial test program. It should also provide guidance to existing licensees (and future applicants) on how to test air-operated components after system modifications.

The original RG 1.68.3 references the American National Standards Institute, International Society of Automation standard ANSI/ISA S7.3-1975, "Quality Standards for Instrument Air" to define the minimum air quality characteristics for nuclear power plants. This standard was reaffirmed in 1981 and should still be endorsed in the updated regulatory guide.

Alternative Approaches

The NRC staff considered the following approaches for revising this guide:

- Do not revise the current guide
- Update the current guide to address the identified problems

Alternative 1: Do Not Revise Regulatory Guide 1.68.3

Under this alternative the NRC would not revise this guide and the original version of the guide would continue to be used. This alternative is considered the baseline or "no action" alternative. Under this alternative the staff would continue to use the existing guide which is almost 30 years old and does not address the identified problems.

Alternative 2: Update Regulatory Guide 1.68.3 to Address Identified Issues

Under this alternative the NRC would revise RG 1.68.3 to address the identified problems and provide improved guidance to the staff, stakeholders, and public on improved preoperational testing of instrument and control air systems (ICAS). This revision would address issues identified since the guide was originally issued in 1982. These include vibration testing of instrument and control air systems (ICAS) to meet seismic requirement, ICAS air-dryer testing to meet dew point design requirements, ICAS accumulator check valves and solenoid valves operating and testing experience, and an update to ISA S7.3 for acceptable industry standards for oil, water and particle matter in ICAS. The revised guide

contains information specific for testing both older plants and newer reactors licensed under both 10 CFR Part 50 and Part 52. The cost to the NRC would be the one time cost of issuing the revised regulatory guide (which is expected to be relatively small), and licensees would incur little or no cost.

Conclusion

Regulatory guide 1.68.3 should be revised to address the identified problems and incorporate the lessons learned in the past 30 years of nuclear power plant operation. The revised guide should contain information for preoperational testing at older nuclear power plants plants and newer reactors licensed under both 10 CFR Part 50 and Part 52.