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Rules and Directives Branch
DAS
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Comments of Draft Regulatory Guide DG-1070

Dear Sir/Madam:

I respectively recommend that the NRC Draft Regulatory Guide DG-1070 not be issued. Draft DG-1070 was prepared without obtaining input from the potential users of the guidance during the developmental stage. The impact of this document on the nuclear industry has not been fully assessed.

EPRI NP-7218 was prepared by the nuclear industry to specifically address the unique aspects of sampling as part of the dedication process. This consensus document is used widely in the nuclear industry. I have been involved in the preparation of the document, providing training to the industry, and implementing the sampling guidance in real world situations. I have a high level of confidence in EPRI NP-7218, which incorporates a graded approach to sampling based on the analysis of various factors, including acceptance and performance history. The guideline's sampling approach takes credit for the high level of confidence in the quality of commercial products as well as the defense in depth operational quality programs which exist at all plants. EPRI NP-7218, when properly implemented, will provide reasonable assurance that proper lot acceptance decisions are made.

The issuance of Draft DG-1070 will place an unnecessary burden on the nuclear industry without any measurable increase in the quality of items being installed in plants. Although the document states it is intended just for simple metallic items, its approach will without doubt be extended to all commercial grade items.

The effectiveness of EPRI NP-7218 is substantiated by the continuously improving overall US nuclear plant performance history in the 1990's during the same period commercial grade dedication has been increasingly used by both vendors and utilities.

If the NRC still has concerns with the industry's sampling programs, despite the improvements in overall plant performance, I recommend a dialog be established with the industry to address these concerns and that the NRC defer the issuance of DG-1070.

Specific comments are attached for your consideration.

I + P-11
Guides + Manuals

Very truly yours,

Frank J. Yurich

Frank J. Yurich

COMMENTS ON DRAFT REGULATORY GUIDE DG-1070

1. The document identifies only one type of lot formation (i.e., heat traceability from one manufacturer.) The degree of sampling for this type of lot formation is excessive, because the properties of items within the inspection lot would be very similar. A 95-5 type sampling program is not necessary to provide reasonable assurance that the vendor has maintained heat traceability.

2. Draft DG 1070 states that MIL-STD-105E is not appropriate for the commercial grade dedication process. There is no evidence that this assumption was validated with other government organizations that have extensively used MIL-STD-105E as a procurement sampling plan. MIL-STD-105E has been the sampling standard for military and navy nuclear item procurements over the last half century and has been utilized even if items are not from a continuous manufacturing process.

3. When using a 95-5 sampling plan, from a probability standpoint, there are no lot formation requirements. The 95-5 plan will, over time, reject lots with 5% defects 95% of the time. The lots will be accepted 5% of the time. Based on probability theory, there is no requirement for a specific type of lot formation.

4. The draft DG-1070 is not as conservative as EPRI NP-7218 from an acceptance standpoint. EPRI NP-7218 is a 0 acceptance plan. If any defectives are discovered in the samples, the lot is rejected and requires additional actions to accept the lot. Draft DG-1070 allows lots with as many as 5 defective samples to be accepted without further screening of the remaining population. In previous NRC vendor inspection reports, the NRC identified sampling plans that allowed lots to be accepted when defects were found to be unacceptable.

5. Sampling guidance for simple metallic items is of little value to the nuclear industry. For operating nuclear power plants, these types of products have very little usage. In most cases, they represent less than 5% of replacement parts utilized.

6. The Draft Regulatory Guide DG-1070 does not list any performance issues which would warrant the need for this conservative guidance. There is no documented evidence of performance issues with simple metallic items, including fasteners, that would indicate current nuclear industry sampling methodologies are inadequate.

7. The Draft Regulatory Guide is based on the premise that partial chemistry tests can be performed nondestructively. For many fasteners, especially smaller fasteners, these partial chemistries may be destructive. The Draft DG-1070 provides no guidance as to what to do in this situation. Industry costs to destructively test to the levels prescribed in Table 1 would be tremendous.

8. Draft DG1070 does not identify what probability formulas (e.g., hypergeometric, binomial, or Poisson) were used to create the sampling tables.

9. The sampling tables have mathematical inconsistencies. The sample sizes fail to increase in a progressive manner with an increase in inspection lot size. Examples of obvious errors follow:

    a. In the 0 maximum number of defects column, the sample size is 50 for a lot size of 79.
    In the same column, the sample size drops to 42 when the lot size increases by 1 to 80.

b. In the 0 maximum number of defects column, the sample size is 53 for a lot size of 99.
In the same column, the sample size drops to 45, when the lot size increases by 1 to 100.

From a probability standpoint a reduction in sample size with an increase in lot size is mathematically impossible.

10. Section 5 , "Decision Rationale" of Draft DG-1070 states the guidance should be issued as a regulatory guide because a wider consensus would be possible. The users of the guidance, however, were not given the opportunity to participate in the development of this guidance or to provide comments before it got to this draft regulatory guidance stage. This is not the way to create a consensus document.

11. One of the major concerns the NRC has expressed is the reduction in the number of nuclear vendors. Section 4.3 of the Draft DG-1070 openly admits, this NRC guidance will further eliminate suppliers. Thus this document is in direct conflict with a major NRC goal, which is maintaining a viable nuclear supplier base.

12. Draft DG-1070, unlike MIL-STD-105E and EPRI NP-7218, does not permit the adjustment of sampling plans based on acceptance trending results.

13. The document does not allow the use of any qualitative factors to arrive at an appropriate level of sampling to achieve reasonable assurance.

14. The Introduction to Draft DG-1070 states that the 95/5 level of sampling was chosen to maintain the current levels of component performance. Commercial grade dedication is a practice that has been used extensively by both utilities and vendors since the early 1990's. The dedication programs, including sampling plans, have contributed to current levels of performance.

15. The Discussion section of Draft DG-1070 implies the level of sampling proposed is required unless an evaluation is performed to prove the item's application has low safety significance.