65-FR-65024
Oct 31/2000 (11)

APS

Angela K. Krainik
Director
Regulatory Affairs
Palo Verde Nuclear
Generating Station

Tel: 623/393-5421
Fax: 623/393-5442

Mail Station 7636
P.O. Box 52034
Phoenix, AZ 85072-2034

102-04517–AKK/SAB/RJR
December 28, 2000

Chief, Rules and Directives Branch
Division of Administrative Services
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

RECEIVED
2001 JAN -5 PM 4:06
Rules and Directives
Branch
USNRC

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Docket Nos. STN 50-528/529/530
Comments on Draft Regulatory Guides DG-1102, Air Filtration and Adsorption Units of Post-Accident Engineered-Safety-Feature Atmosphere Cleanup Systems, and DG-1103, Air Filtration and Adsorption Units of Normal Ventilation Exhaust Systems

Enclosed are comments from Arizona Public Service Company (APS) on Draft Regulatory Guides DG-1102 and DG-1103. The comments on these draft documents are being submitted together because of the close relationship of DG-1102 and DG-1103.

APS has reviewed and concurs with the comments being made by NEI as submitted in their letter dated December 22, 2000. In addition to the comments provided in the enclosure to this letter, APS has two general comments provided below:

1. The author(s) of the regulatory guides should consider using the same diction in each document when discussing the same information, concept, system, or component. As an example, Regulatory Position C.1 of each document contains almost the same wording throughout each paragraph. The first sentence states in one regulatory guide: "...provides **methods** that are acceptable to the NRC staff..." while the other states: "...provides **guidance** that is acceptable to the NRC staff..." Another example is the use of the term in-place leak test (i.e., <u>adsorber in-place</u> leak test; <u>in-place adsorber</u> leak test). It is suggested that in conjunction with the author's independent review of each document, a cross-review of both documents would eliminate this condition, providing clarity and quality between the two.

Template = ADM-013

E-RIDS = ADM-03
Add: Ann Beranek (AFB)

2. The author's review of a comment received for one regulatory guide should consider that comment's relevance to the applicable information in the other regulatory guide. This will provide assurance of a consistent format.

No commitments are being made to the NRC by this letter.

Please contact Mr. Scott Bauer at (623) 393-5978 if you have any questions.

Sincerely,

Daniel Marks for
A. Krainik

AKK/SAB/RJR/ kg

Enclosure

cc: E. W. Merschoff
J. N. Donohew
J. H. Moorman
D. J. Modeen, NEI

ENCLOSURE

Comments on Draft Regulatory Guides DG-1102 "Design, Inspection, and Testing Criteria for Air Filtration and Adsorption Units of Post-Accident Engineered-Safety-Feature Atmosphere Cleanup Systems in Light-Water-Cooled Nuclear Power Plants" and DG-1103 "Design, Inspection, and Testing Criteria for Air Filtration and Adsorption Units of Normal Ventilation Exhaust Systems in Light-Water-Cooled Nuclear Power Plants"

DRAFT DG-1102-R.G. 1.52 COMMENTS:

1) B. DISCUSSION, 6th paragraph from end, third and fourth sentences.

   These sentences define the use/purpose of HEPA filters positioned downstream of the adsorber as collecting carbon fines from the adsorber and providing additional protection should the upstream HEPA filters fail. The statement shows a lack of confidence in the ability of the upstream HEPA bank. Should the system experience a component failure, reliance would be upon the redundant system. Additionally, the American Society of Mechanical Engineers (ASME) AG-1 code does not identify the need for downstream HEPA filters. High efficiency filters were determined to be adequate (possibly due to the physical size of the carbon particles). It is suggested the sentence be modified to include high efficiency filters. This change would also be necessary in the second sentence in Position C.3.1 discussing (5) HEPA filter after the adsorbers or postfilter.

2) B. DISCUSSION, 5th paragraph from end, first and second sentence.

   The use of the words "supply fan" and "exhaust fan" when describing a pressurization issue in this context may be confusing as these terms have other meanings when discussing ventilation equipment. It is suggested to replace the first and second sentences with the following to enhance the pressurization concept and eliminate the word "tradeoffs":

   The location of the fan, with respect to the overall system design and the individual ESF atmosphere cleanup unit, is important due to the imposed positive and negative pressure gradients the fan creates during operation. Consideration should be given to the impact of the ESF atmosphere cleanup unit's operating pressure with respect to surrounding areas in the system design.

3) C. Regulatory Position 3.1, second sentence.

This sentence appears to list the necessary ESF atmosphere cleanup unit components in sequential order. Does "...(5) HEPA filter after the adsorbers or postfilter..." mean that there is to be a HEPA filter after an adsorber or, if so equipped, after the high efficiency filter (non-HEPA type), or last stage filter? Or, is it stating another name for the HEPA directly downstream of the adsorber to be a postfilter? It is suggested that this be clarified. See also comment 1 above.

Secondly, the sequence identifies the "(6) fan" in a configuration providing a negative pressure characteristic to the ESF atmosphere cleanup system. This is in conflict to what was stated in the 5th paragraph from the end of the Section B, Discussion, that considers the location of such a component in the design. It is suggested that the paragraph be restructured to separate the components that ultimately would not change in sequence from the components that may be in different order per the design concept. This would also remedy the imposed concept that items listed as "(7) interspersed ducts, motors, dampers..." would always be downstream of the unit with nothing listed upstream.

4) C. Regulatory Position 3.1, third sentence.

This sentence discusses maintaining humidity by heaters or system design (as verified by analysis). It is suggested that, since the other components were identified in a sequence, a recommendation be made regarding where in the sequence the heater should be. Additionally, it is suggested that the word "charcoal" be replaced with the word "adsorber", because the concept is that the air enters the adsorber, the adsorber being the component, the charcoal being the adsorber's filter media.

5) C. Regulatory Position 3.5, first and second sentences.

This sentence states that to ensure reliable in-place testing, limit the size of each cleanup unit to a volumetric flow rate of approximately 30,000 cfm. Limiting the size of the unit will not ensure reliable in-place testing results. Reliable data from in-place tests may be influenced by test equipment, the technique used in testing the system/component, as well as the overall system design configuration. The testing of much larger volumetric systems sometimes yields more reliable data with less error than smaller systems. It is suggested that these sentences be deleted.

If multiple units are used, this would aid in the maintenance of systems by allowing maintenance to proceed on a portion of the system while the system is not completely out of service (such as operating at 50% capacity which is a more desired state of operation than no ventilation at all).

6) C. Regulatory Position 3.5, third sentence.

The third sentence identifies a design preference for the layout of the HEPA bank to be three high and ten wide, using "ease of maintenance" for the bases. It is suggested that this sentence be deleted. The ease of maintenance concept can be incorporated into other configurations just as well during the design stage. Additionally, the ease of maintenance issue is already discussed in Regulatory Position 5.1.

Considering the above comments concerning Regulatory Position, 3.5, this position should only discuss adsorber residence time (sentences four and five). Additionally, it is suggested that the 4th paragraph of Regulatory Position 4.11 should be incorporated into this paragraph.

7) C. Regulatory Position 3.9, first sentence.

The sentence states in part, "...ESF systems and components should be design to control leakage and facilitate maintenance..." (underline emphasis added). It is suggested that the leakage to be controlled be defined.

8) C. Regulatory Position 6.2.

This position states that a visual inspection should be performed prior to certain tests. Based on the first paragraph in Section 6, this regulatory position is in the context of routine in-service testing. Thus, initial acceptance testing has already been completed and the system is in service. The airflow distribution test is an initial acceptance test and, therefore, should not be included in Regulatory Position 6.2. There is also no reason to differentiate between the two in-place leak tests. Additionally, Regulatory Positions 6.3 and 6.4 suggest leak tests following certain events such as water intrusion, fire, painting, etc. A visual inspection may preclude the need to perform leak tests. Therefore, it is suggested to revise the paragraph as follows:

"A visual inspection of the ESF atmosphere cleanup system and all associated components should be performed as a prerequisite to in-service testing activities and after transient conditions that may adversely affect the performance of the system. The inspection should be performed in accordance with the provisions of Section 5 of ASME N510-1989 (Ref. 8)."

9) C. Regulatory Position, 6.3, first sentence.

The sentence states when in-place tests on HEPA components are performed. Is an in-place leak test on a bank of HEPA necessary after (4)...intrusion of water... or (5) following painting, fire, or chemical release in any ventilation zone communicating with the system? This appears, for most instances, to be extreme. Additionally, an in-place leak test will not provide adequate data for determining the strength of the media. Does an in-place test need to be performed prior to replacing the media? An evaluation such as a visual inspection could be performed as noted in the comment above on Regulatory Position 6.2 to determine the proper level of remediation to ensure the integrity of the components. The proper level of remediation may include an in-place leak test. It is suggested that wording be applied to allow an evaluation of the condition to determine the proper level of remediation.

10) C. Regulatory Position 6.3, Footnote 7.

This paragraph includes discussion on the development of a program which, in part, is to define the terms "painting", "fire" and "chemical release", and is based upon a well documented, sound and conservative technical basis. Does the regulator have an example of a program that identifies this basis? Is a program adequate which monitors such activity for evaluation purposes?

11) C. Regulatory Position 6.4.

This position states the same as 6.3, except it applies to adsorbers. This position should place the concern on the adsorber media in the cases of water intrusion, painting, fire, etc., resulting in a test of the charcoal (carbon) media and not an in-place test. It is suggested that wording be applied to allow an evaluation of the condition to determine the proper level of remediation.

12) C. Regulatory Position 6.5.

This position discusses protection of HEPA and adsorber components during welding repairs by removing the components. It is suggested that the wording be included to state that protecting the components from the welding process is sufficient. Using a shield or protective blanket or cover could do this.

DRAFT DG-1103-R.G. 1.140 COMMENTS:

1) A. INTRODUCTION, first paragraph, third sentence.

   The sentence implies that an exhaust system may consist of heaters and cooling coils in conjunction with more heaters and other components. It is suggested that the wording be revised to state "...may consist of heaters and/or cooling coils, prefilters,....."

2) B. DISCUSSION, fourth paragraph, third sentence.

   See comment 1 on DG-1102.

3) B. DISCUSSION, fifth paragraph, last sentence.

   This sentence states that the effects of temperature and humidity can be determined by scheduled testing. It is suggested that the words "...scheduled testing." be revised to "...a monitoring program." This would emphasize evaluating the data that is obtained through scheduled testing.

4) B. DISCUSSION, sixth paragraph, second and fifth sentences.

   These sentences discuss ensuring the reliability of the system through initial testing, periodic testing, inspections, and proper maintenance. Are these not devices of a performance monitoring program? It is suggested that the paragraph be restructured to indicate a performance monitoring program with inspections and scheduled testing. Possibly combine the second and fifth sentences, relocating them after the discussion of design phase considerations. Is "careful attention" the same as "Consideration", a term more prevalently used in the guide?

5) C. Regulatory Position 3.1, fourth sentence.

   See comment 1.

6) C. Regulatory Position 3.2.

   This position discusses limiting the volumetric size of the unit. See comment 5 on DG-1102.

7) C. Regulatory Position 3.5.

The position discusses components of what normally is part of a building HVAC supply system. The guide is mainly referencing exhaust systems. It is suggested that the discussion clearly provide reference to a supply system. Additionally, the reference to "...salty environment near ocean,..." should be revised for a more clear definition.

8) C. Regulatory Position 4.7, second sentence.

See comment 1.

9) C. Regulatory Position 6, In-Place Testing Criteria.

This sentence discusses in-service testing per ASME N510-1989, but not Acceptance Testing per AG-1-TA-1997. It is suggested that the latter be incorporated into the text.

10) C. Regulatory Position 6.1.

This position discusses the need to perform a visual inspection. See comment 8 on DG-1102.

11) C. Regulatory Position 6.2.

This position discusses the airflow distribution test usually performed during acceptance testing. This is a prerequisite to in-place leak testing during acceptance tests, which would also be required after maintenance affecting the airflow distribution. Why is it listed here and not in R.G. 1.52? Is it necessary to list such an acceptance test?