

2.6.5 Nuclear Auxiliary Building Ventilation System (NABVS)

Design Description

1.0 System Description

The nuclear auxiliary building ventilation system (NABVS) provides conditioned air to the Nuclear Auxiliary Building (NAB), Fuel Building (FB), Containment Building, and the annulus area between the Containment Building and the Shield Building.

The exhaust air from the NAB, FB, Safeguard Building (SB), Containment Building, and the annulus is processed through the NABVS filtration trains prior to release to the environment via the vent stack.

The NABVS is classified as a non-safety related and non-seismic system, except the backdraft damper located at the discharge into the vent stack.

The NABVS performs the following safety-related function:

- A safety-related Seismic Category I backdraft damper is located at the NABVS exhaust duct into the vent stack. This backdraft damper isolates the NABVS as required from other safety systems exhausting to the vent stack during accident operation.
- During accident conditions, the NABVS is shut down while the safety related systems SBVS and AVS operate. The backdraft damper shuts by a differential pressure between the vent stack and NABVS duct.

The remaining portions of the NABVS perform no safety-related function and the system is not required to operate during a design basis accident.

2.0 Arrangement

2.1 The functional arrangement of the NABVS exhaust backdraft damper at the vent stack is as described in the Design Description of Section 2.6.5, Table 2.6.5-1—Nuclear Auxiliary Building Ventilation System Equipment Mechanical Design, and as shown on Figure 2.6.5-1—Nuclear Auxiliary Building Exhaust Filtration Trains Subsystem Functional Arrangement.

2.2 Deleted.

3.0 Mechanical Design Features

3.1 The NABVS exhaust backdraft damper will function to change position as listed in Table 2.6.5-1 under normal operating conditions.

3.2 Equipment identified as Seismic Category I in Table 2.6.5-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.6.5-1.

- 3.3 Equipment listed in Table 2.6.5-1 as ASME AG-1 Code are designed in accordance with ASME AG-1 Code requirements.
- 3.4 Equipment listed in Table 2.6.5-1 as ASME AG-1 Code are fabricated in accordance with ASME AG-1 Code requirements, including welding requirements.
- 3.5 Equipment listed in Table 2.6.5-1 as ASME AG-1 Code are inspected, and tested in accordance with ASME AG-1 Code requirements.

4.0 Equipment and System Performance

- 4.1 Upon receipt of a containment isolation signal, the NABVS is shut down, and the backdraft damper prevents the SBVS and AVS exhaust air flow from discharging into the NABVS.

Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.6.5-2 lists the NABVS ITAAC.

Table 2.6.5-1—NABVS Equipment Mechanical Design

| Description | Tag Number | Location | ASME AG-1 Code | Function | Seismic Category |
|--------------------|-------------------|-----------------|-----------------------|-----------------|-------------------------|
| Backdraft Damper | 30KLE50AA001 | UFA | Yes | Close | I |

**Table 2.6.5-2—Nuclear Auxiliary Building Ventilation System ITAAC
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| | Commitment Wording | Inspection, Tests, Analyses | Acceptance Criteria |
|-----|---|---|---|
| 2.1 | The functional arrangement of the NABVS exhaust backdraft damper at the vent stack is as described in the Design Description of Section 2.6.5, Table 2.6.5-1, and as shown on Figure 2.6.5-1. | An inspection of the as-built NABVS exhaust backdraft damper at the vent stack functional arrangement will be performed. | The NABVS exhaust backdraft damper at the vent stack conforms to the functional arrangement as described in the Design Description of Section 2.6.5, Table 2.6.5-1, and as shown on Figure 2.6.5-1. |
| 2.2 | Deleted. | Deleted. | Deleted. |
| 3.1 | The NABVS exhaust backdraft damper will function to change position as listed in Table 2.6.5-1 under normal operating conditions. | Tests will be performed to verify the ability of the NABVS exhaust backdraft damper to change position under normal operating conditions. | The NABVS exhaust backdraft damper changes position as listed in Table 2.6.5-1 under normal operating conditions. |
| 3.2 | Equipment identified as Seismic Category I in Table 2.6.5-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.6.5-1. | <ul style="list-style-type: none"> a. Type tests, analyses, or a combination of type tests and analyses will be performed on the equipment identified as Seismic Category I in Table 2.6.5-1 using analytical assumptions, or under conditions, which bound the Seismic Category I design requirements. b. An inspection will be performed of the as-built equipment identified as Seismic Category I in Table 2.6.5-1 to verify that the equipment, including anchorage, are installed per the approved design requirements. | <ul style="list-style-type: none"> a. Test/analysis reports conclude that the equipment identified as Seismic Category I in Table 2.6.5-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.6.5-1 including the time required to perform the listed function. b. Inspection reports conclude that the equipment identified as Seismic Category I in Table 2.6.5-1, including anchorage, are installed per the approved design requirements. |

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| | Commitment Wording | Inspection, Tests, Analyses | Acceptance Criteria |
|-----|--|--|---|
| 3.3 | Equipment listed in Table 2.6.5-1 as ASME AG-1 Code are designed in accordance with ASME AG-1 Code requirements. | An analysis will be performed of ASME AG-1 Code Design Verification Reports. | ASME AG-1 Code Design Verification Reports (AA-4400) conclude that the design of equipment listed as ASME AG-1 Code in Table 2.6.5-1 complies with ASME AG-1 Code requirements. |
| 3.4 | Equipment listed in Table 2.6.5-1 as ASME AG-1 Code are fabricated in accordance with ASME AG-1 Code requirements, including welding requirements. | An inspection of the as-built fabrication activities and documentation for ASME AG-1 Code equipment will be conducted. | A report concludes that ASME AG-1 Code equipment listed in Table 2.6.5-1 are fabricated in accordance with ASME AG-1 Code requirements. |
| 3.5 | Equipment listed in Table 2.6.5-1 as ASME AG-1 Code are installed, inspected, and tested in accordance with ASME AG-1 Code requirements. | An inspection of the as-built construction activities and documentation for ASME AG-1 Code equipment will be conducted. | A report concludes that ASME AG-1 Code equipment listed in Table 2.6.5-1 are installed, inspected, and tested in accordance with ASME AG-1 Code requirements. |
| 4.1 | Upon receipt of a containment isolation signal, the NABVS is shut down, and the backdraft damper prevents the SBVS and AVS exhaust air flow from discharging into the NABVS. | A test will be performed to verify that upon receipt of a containment isolation test input signal, that the NABVS is shut down and the backdraft damper prevents the SBVS and AVS exhaust air flow discharging into NABVS. | Upon receipt of a containment isolation test input signal from the PACS module, the NABVS is shut down and the backdraft damper prevents the SBVS and AVS exhaust air flow from discharging into the NABVS. |