

B 3.6 CONTAINMENT SYSTEMS

B 3.6.3 Containment Isolation Valves

BASES

---

BACKGROUND

The containment isolation valves form part of the containment pressure boundary and provide a means for fluid penetrations not serving accident consequence limiting systems to be provided with two isolation barriers that are closed on an automatic isolation signal. These isolation devices consist of either passive devices or active (automatic) devices. Manual valves, non-automatic power operated valves in their closed position, de-activated automatic valves secured in their closed position (including check valves with flow through the valve secured), blind flanges, and closed systems are considered passive devices. Check valves, or other automatic valves designed to close following an accident without operator action, are considered active devices. Two barriers in series are provided for each penetration so that no single credible failure or malfunction of an active component can result in a loss of isolation or leakage that exceeds limits assumed in the safety analyses. One of these barriers may be a closed system. These barriers (typically containment isolation valves) make up the Containment Isolation System.

Containment isolation occurs upon receipt of a high containment pressure or diverse containment isolation signal. The containment isolation signal closes automatic containment isolation valves in fluid penetrations not required for operation of engineered safeguard systems to prevent leakage of radioactive material. Upon actuation, automatic containment valves also isolate systems not required for containment or Reactor Coolant System (RCS) heat removal. Other penetrations are isolated by the use of valves in the closed position or blind flanges. As a result, the containment isolation valves (and blind flanges) help ensure that the containment atmosphere will be isolated in the event of a release of radioactive material to containment atmosphere from the RCS following an accident.

OPERABILITY of the containment isolation valves (and blind flanges) supports containment OPERABILITY during accident conditions.

9904140046 990406  
PDR ADOCK 05000269  
P PDR

(continued)

BASES

---

APPLICABLE  
SAFETY ANALYSES  
(continued)

accident (LOCA)(Ref. 2). In the analysis for this accident, it is assumed that containment isolation valves are either closed or function to close within the required isolation time following event initiation. This ensures that potential paths to the environment through containment isolation valves (including reactor building purge valves) are minimized. The safety analysis assumes that the 48 inch purge valves are closed at event initiation.

The LOCA analysis assumes a fixed amount of core inventory escapes. No mechanistic scenario is evaluated to determine what portion of the inventory is released prior to closure of the containment isolation valves. Industry standards for sizing valve operators govern the closure times of the containment isolation valves.

The purge valves may be unable to close in the environment following a LOCA. Therefore, each of the purge valves is required to remain sealed closed during MODES 1, 2, 3, and 4.

The containment isolation valves satisfy Criterion 3 of 10 CFR 50.36 (Ref. 3).

---

LCO

Containment isolation valves form a part of the containment boundary. The containment isolation valve safety function is related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during an accident.

The automatic power operated isolation valves are required to have isolation times within limits and to actuate on an automatic isolation signal. The 48 inch purge valves must be maintained sealed closed. The valves covered by this LCO are listed in the UFSAR (Ref. 4).

The normally closed isolation valves are considered OPERABLE when non-automatic power operated valves are closed, manual valves are closed, check valves have flow through the valve secured, blind flanges are in place, and closed systems are intact.

The containment isolation valve leakage rates are addressed by LCO 3.6.1, "Containment," as Type C testing.

(continued)

Attachment 2

B 3.6 CONTAINMENT SYSTEMS

B 3.6.3 Containment Isolation Valves

BASES

---

BACKGROUND

The containment isolation valves form part of the containment pressure boundary and provide a means for fluid penetrations not serving accident consequence limiting systems to be provided with two isolation barriers that are closed on an automatic isolation signal. These isolation devices consist of either passive devices or active (automatic) devices. Manual valves, ~~de-activated~~ non-automatic valves ~~secured~~ in their closed position, ~~de-activated~~ automatic valves secured in their closed position (including check valves with flow through the valve secured), blind flanges, and closed systems are considered passive devices. Check valves, or other automatic valves designed to close following an accident without operator action, are considered active devices. Two barriers in series are provided for each penetration so that no single credible failure or malfunction of an active component can result in a loss of isolation or leakage that exceeds limits assumed in the safety analyses. One of these barriers may be a closed system. These barriers (typically containment isolation valves) make up the Containment Isolation System.

power operated

Containment isolation occurs upon receipt of a high containment pressure or diverse containment isolation signal. The containment isolation signal closes automatic containment isolation valves in fluid penetrations not required for operation of engineered safeguard systems to prevent leakage of radioactive material. Upon actuation, automatic containment valves also isolate systems not required for containment or Reactor Coolant System (RCS) heat removal. Other penetrations are isolated by the use of valves in the closed position or blind flanges. As a result, the containment isolation valves (and blind flanges) help ensure that the containment atmosphere will be isolated in the event of a release of radioactive material to containment atmosphere from the RCS following an accident.

OPERABILITY of the containment isolation valves (and blind flanges) supports containment OPERABILITY during accident conditions.

(continued)

BASES

---

APPLICABLE  
SAFETY ANALYSES  
(continued)

accident (LOCA)(Ref. 2). In the analysis for this accident, it is assumed that containment isolation valves are either closed or function to close within the required isolation time following event initiation. This ensures that potential paths to the environment through containment isolation valves (including reactor building purge valves) are minimized. The safety analysis assumes that the 48 inch purge valves are closed at event initiation.

The LOCA analysis assumes a fixed amount of core inventory escapes. No mechanistic scenario is evaluated to determine what portion of the inventory is released prior to closure of the containment isolation valves. Industry standards for sizing valve operators govern the closure times of the containment isolation valves.

The purge valves may be unable to close in the environment following a LOCA. Therefore, each of the purge valves is required to remain sealed closed during MODES 1, 2, 3, and 4.

The containment isolation valves satisfy Criterion 3 of 10 CFR 50.36 (Ref. 3).

---

LCO

Containment isolation valves form a part of the containment boundary. The containment isolation valve safety function is related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during an accident.

The automatic power operated isolation valves are required to have isolation times within limits and to actuate on an automatic isolation signal. The 48 inch purge valves must be maintained sealed closed. The valves covered by this LCO are listed in the UFSAR (Ref. 4).

The normally closed isolation valves are considered OPERABLE when non-automatic power operated valves are closed ~~and de-~~  
~~activated~~, manual valves are closed, check valves have flow through the valve secured, blind flanges are in place, and closed systems are intact.

The containment isolation valve leakage rates are addressed by LCO 3.6.1, "Containment," as Type C testing.

(continued)

---