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A Duke Energy Company

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June 10, 2004

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Subject: Duke Energy Corporation
Catawba Nuclear Station (CNS), Units 1 and 2
Docket Numbers 50-413 and 50-414
Technical Specification (TS) Amendment
to Section 3.6.3, "Containment Isolation Valves" and
the associated Bases section.

Pursuant to 10 CFR 50.90, Duke is requesting amendments to Technical Specifications (TS) Section 3.6.3, "Containment Isolation Valves". This amendment change will revise Surveillance Requirement (SR) 3.6.3.6 and the associated Bases section to allow the required frequency of the SR to be specified in the Containment Leak Rate Testing Program.

This license amendment request was developed based on information listed on Attachment 5 of this document. This attachment contains the results of past leak rate tests for the valves controlled by this SR. These test results show no adverse leakage results have occurred since 1999 for the Hydrogen Purge (VY) System and Containment Air Release and Addition (VQ) System valves and since 1998 for the Containment Purge (VP) System valves.

This license amendment is similar to the December 7, 2001 McGuire submittal, which was approved as amendments 207/188. Pages in the McGuire submittal noted a deviation from the March 1, 2001 Catawba submittal. These pages, concerning SR 3.6.3.6, are being revised in this Catawba submittal to be consistent with the NRC-approved McGuire submittal.

This license amendment is consistent with the guidance contained in Technical Specification Task Force (TSTF)-52, Revision 3.

A001

Duke is requesting that the NRC review and approve the enclosed license amendment request no later than December 2004 to reduce the testing work load on the site.

Implementation of this amendment will not impact the Catawba Updated Final Safety Analysis Reports (UFSAR).

Duke Energy Corporation has determined that a 30-day implementation period would be acceptable in order to revise surveillances with minimum impact on scheduling.

In accordance with Duke administrative procedures and the Quality Assurance Program Topical Report, the proposed amendment has been previously reviewed and approved by the CNS Plant Operations Review Committee and on an overall basis by the Duke Nuclear Safety Review Board.

The contents of this amendment request package are as follows:

1. Attachment 1 provides marked copies of the affected TS and TS Bases pages for Catawba showing the proposed changes.

2. Attachment 2 provides a description of the proposed changes and technical justification.

3. Pursuant to 10 CFR 50.92, Attachment 3 documents the determination that the amendments contain No Significant Hazards Considerations.

4. Pursuant to 10 CFR 51.22(c)(9), Attachment 4 provides the basis for the categorical exclusion from performing an Environmental Assessment/Impact Statement.

5. Attachment 5 provides data for the Catawba Unit 1 and Unit 2 Containment Purge (VP) System, Hydrogen Purge (VY) System, and Containment Air Release and Addition System (VQ) Valve Leakage.

Pursuant to 10 CFR 50.91, copies of this proposed amendment are being sent to the appropriate state officials.

There are no regulatory commitments contained in this letter or its attachments.

Inquiries on this matter should be directed to A.P Jackson at (803) 831-3742.

Very truly yours,

Dhiaa M. Jamil
Site Vice President
Catawba Nuclear Station

APJ/apj

Attachments

Dhiaa M. Jamil affirms that he is the person who subscribed his name to the foregoing statement, and that all the matters and facts set forth herein are true and correct to the best of his knowledge.

Dhiaa M. Jamil, Site Vice President, Catawba Nuclear Station

Subscribed and sworn to me: 06/10/04
Date

Eleanor P. Montgomery
Notary Public

My commission expires: MY COMMISSION EXPIRES MARCH 27, 2008
Date

SEAL

xc (with attachments):

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ATTACHMENT 1

MARKED-UP TS AND TS BASES PAGES FOR CATAWBA

INSERTS

Insert 1 for TS 3.6.3, (SR 3.6.3.6):

In accordance with the Containment Leakage Rate Testing Program.

Insert 2 for Bases 3.6.3

For the Containment Purge (VP) System valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option B is required to ensure operability. The measured leakage rate for the containment purge valves must be $\leq$ 0.05 La when pressurized to Pa. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), these valves will not be placed on the maximum extended test interval, but tested on the nominal test interval in accordance with the Containment Leakage Rate Testing Program.

The Containment Air Release and Addition (VQ) System and the Hydrogen Purge (VY) System valves have a demonstrated history of acceptable leakage. The measured leakage rate for containment air release and addition valves must be $\leq$ 0.01 La when pressurized to Pa. The measured leakage rate for hydrogen purge valves must be $\leq$ 0.05 La when pressurized to Pa. These valves will be tested in accordance with 10CFR50, Appendix J, Option B. If at any time the leakage deteriorates to unacceptable levels, the frequency will be reduced until acceptable leakage performance is demonstrated and extended interval testing can resume.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.4	----------NOTE---------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. ---------- Verify each containment isolation manual valve and blind flange that is located inside containment or annulus and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days
SR 3.6.3.5	Verify the isolation time of automatic power operated containment isolation valve is within limits.	In accordance with the Inservice Testing Program
SR 3.6.3.6	Perform leakage rate testing for Containment Purge System, Hydrogen Purge System, and Containment Air Release and Addition System valves with resilient seals.	~~184 days~~ ~~AND~~ ~~within 92 days after opening the valve~~ Delete and Insert 1
SR 3.6.3.7	Verify each automatic containment isolation valve that is not locked, sealed or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	18 months

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.5

Verifying that the isolation time of each automatic power operated containment isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analyses. The isolation time is specified in the UFSAR and the Frequency of this SR is in accordance with the Inservice Testing Program.

SR 3.6.3.6

~~For valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option B, is required to ensure OPERABILITY. The measured leakage rate for Containment Purge System and Hydrogen Purge System valves must be $\leq 0.05 L_a$ when pressurized to P_a. The measured leakage rate for Containment Air Release and Addition valves must be $\leq 0.01 L_a$ when pressurized to P_a. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), a Frequency of 184 days was established.~~

Delete and Insert 2 →

~~The Containment Air Release and Addition System valves may be used during normal operation, therefore, in addition to the 184 day Frequency, this SR must be performed every 92 days after opening the valves. The 92 day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (beyond that occurring to a valve that has not been opened). Thus, decreasing the interval (from 184 days) is a prudent measure after a valve has been opened. The Containment Purge and Hydrogen Purge System valves remain closed during normal operation and this SR is only performed every 184 days for these valves.~~

SR 3.6.3.7

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures that each automatic containment isolation valve will actuate to its isolation position on a containment

ATTACHMENT 2

DESCRIPTION OF PROPOSED CHANGES AND TECHNICAL JUSTIFICATION

DESCRIPTION OF PROPOSED CHANGES AND TECHNICAL JUSTIFICATION

Background Information:

In March 2001 Catawba Nuclear Station submitted an amendment to allow implementation of 10CFR50, Appendix J, Option B, which governs performance based containment leakage testing requirements for Types B and C testing. In December of 2001 the McGuire Nuclear Station issued a similar amendment based on 10CFR50, Appendix J, Option B. It was understood for both of these amendments that for certain containment valves with resilient seals, additional leakage rate testing beyond the test requirements of 10CFR50, Appendix J, Option B would be required to ensure operability. At that time Catawba did not wish to change the surveillance interval for these valves with resilient seals as specified in SR 3.6.3.6. However, McGuire's submittal did revise SR 3.6.3.6 to allow the interval to be "specified in accordance with the Containment Leakage Rate Testing Program." Subsequently, the test results at Catawba have demonstrated that the test interval of 184 days is conservative. Therefore, Catawba is proposing a revision of SR 3.6.3.6 to specify that the test interval be: "In accordance with the Containment Leakage Rate Testing Program."

Description of Proposed Changes:

Duke Energy Corporation is proposing to revise Technical Specification Surveillance Requirement (SR) 3.6.3.6 and the associated Bases section. The following acronyms defined here will be used below: L_a (Design Leakage Rate) and P_a (Design Containment Pressure).

The specific revision is as follows:

SR 3.6.3.6 currently states:

"Perform leakage rate testing for Containment Purge System, Hydrogen Purge System, and Containment Air Release and Addition System valves with resilient seals."

This has a frequency of once every "184 days and within 92 days after opening the valve."

This amendment would change the frequency to read:

"In accordance with the Containment Leakage Rate Testing Program."

The Bases for SR 3.6.3.6 will be deleted and replaced with the following paragraphs:

For the Containment Purge (VP) System valves with resilient seals, additional leakage rate testing beyond the test requirements of 10 CFR 50, Appendix J, Option B is required to ensure operability. The measured leakage rate for the containment purge valves must be $\leq$ 0.05 La when pressurized to Pa. Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), these valves will not be placed on the maximum extended test interval, but tested on the nominal test interval in accordance with the Containment Leakage Rate Testing Program.

The Containment Air Release and Addition (VQ) System and the Hydrogen Purge (VY) System valves have a demonstrated history of acceptable leakage. The measured leakage rate for containment air release and addition valves must be $\leq$ 0.01 La when pressurized to Pa. The measured leakage rate for hydrogen purge valves must be $\leq$ 0.05 La when pressurized to Pa. These valves will be tested in accordance with 10CFR50, Appendix J, Option B. If at any time the leakage deteriorates to unacceptable levels, the frequency will be reduced until acceptable leakage performance is demonstrated and extended interval testing can resume.

Regulatory Requirements and General Discussion

Technical Justification:

Each Unit 1 and 2 Containment Purge Ventilation (VP) System contains nine containment penetrations (M456, M432, M357, M434, M368, M433, M119, M213, and M140). Each penetration contains redundant containment isolation valves. The valves are pneumatic operated butterfly valves with resilient seals. During normal plant operations, these valves are administratively locked closed by de-energizing their solenoid valves (SR 3.6.3.1). The valves are only opened during cold shutdown and refueling activities. During core alterations or movement of irradiated fuel assemblies within containment, these penetrations can only be open if they are

exhausting through an operable Containment Purge Exhaust System (Technical Specification 3.9.3).

Each Unit 1 and 2 Hydrogen Purge (VY) System contains two containment penetrations (M332 and M346). Each penetration contains redundant containment isolation valves. Three of these valves are motor operated gate valves with soft seats and one is a passive check valve. During normal plant operations, the motor operated gate valves are administratively locked closed by de-energizing their actuators (SR 3.6.3.1). The passive check valve located inside the containment maintains a closed position since the blower is not placed in operation. The Hydrogen Purge System containment isolation valves are only opened during cold shutdown or no mode activities. The Hydrogen Purge System containment isolation valves are maintained in a closed position during core alterations or movement of irradiated fuel assemblies within the containment (Technical Specification 3.9.3).

Each Unit 1 and Unit 2 Containment Air Release and Addition (VQ) System contains two penetrations (M204 and M386). Each penetration contains redundant containment isolation valves. These are gate and diaphragm valves. The VQ System is designed to provide a means of controlling the containment pressure between 0.3 psig and -0.1 psig during normal plant operations including start-up and shutdown transients. Containment pressure fluctuations due to postulated accidents are mitigated by safety related systems, rather than the Containment Air Release and Addition System. The Containment isolation valves will automatically shut upon receipt of a Phase "A" containment isolation to prevent containment air from being purged to the atmosphere during a Design Basis Event. Technical Specification 3.3.6 discusses the isolation instrumentation for this system.

The surveillance interval extensions being sought are supported by the leakage history. Attachment 5 is a leakage summary for the VP, VQ, and VY Systems.

The administrative leakage limits for the VP valves are 420 standard cubic centimeters per minute (sccm) for the 12 inch diameter valves and 840 sccm for the 24 inch diameter valves. These administrative limits were not challenged during the period reviewed. Acceptable leakage is confirmed prior to entry into mode 4. In modes 1-4, the VP valves are closed with power removed per Technical Specification SR 3.6.3.1. Degradation from valve operation is a major mechanism which contributes to resilient seal degradation. By limiting valve manipulation in modes 1 through 4,

susceptibility to this mechanistic failure mode has been limited. A test interval of 18 months would be acceptable for the VP valves based upon the operational limits imposed by the Technical Specifications and historical leakage data.

Leakage history for the VY System valves with resilient seals supports interval extension. These are 4 inch check and gate valves that have exhibited minimal leakage as indicated in Attachment 5. The administrative leakage limit is 1200 sccm for gate valves and 2400 sccm for check valves. In modes 1-4, the VY valves are closed with power removed per Technical Specification SR 3.6.3.1. Degradation from valve operation is a major mechanism which contributes to resilient seal degradation. By limiting valve manipulation in modes 1 through 4, susceptibility to this mechanistic failure mode has been limited. As shown on Attachment 5, these valves have an excellent leakage history; therefore extending the test interval beyond the current limit is justified. These valves will be evaluated for extended test intervals using the Containment Leakage Rate Testing Program, which is based on 10CFR50, Appendix J, Option B.

Leakage history for the VQ System valves with resilient seals also supports interval extension. These are 4 inch diameter diaphragm valves that have exhibited minimal leakage as indicated in Attachment 5. The administrative leakage limit for the VQ power operated diaphragm valves is 690 sccm. As shown on Attachment 5, these valves have an excellent leakage history; therefore extending the test interval beyond the current limit is justified. These valves will be evaluated for extended test intervals using the Containment Leakage Rate Testing Program, which is based on 10CFR50, Appendix J, Option B.

ATTACHMENT 3

NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Requested Change:

Revision of Technical Specification (TS) Section 3.6.3, "Containment Isolation Valves" and Associated Bases No Significant Hazards Determination:

The following discussion is a summary of the evaluation of the changes contained in these proposed amendments against the 10 CFR 50.92(c) requirements to demonstrate that all three standards are satisfied. A no significant hazards consideration is indicated if operation of the facility in accordance with the proposed amendments would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated, or

2. Create the possibility of a new or different kind of accident from any accident previously evaluated, or

3. Involve a significant reduction in a margin of safety.

First Standard

Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

No.

This amendment will not change any previously evaluated accidents such as the postulated "Fuel Handling Accident (FHA) in Containment". No credit is assumed for VP containment isolation in the FHA within containment. The Containment Purge (VP) System and Hydrogen Purge (VY) System containment isolation valves are sealed closed during modes 1 through 4. The Containment Air Release and Addition (VQ) System containment isolation valves are designed to close within 5 seconds of a containment phase "A" isolation signal. The prevention and mitigation of these accidents is not affected by this change.

Test data demonstrates that the likelihood of a malfunction of a resilient seal in one of the VP, VY, or VQ valves is not increased by this change in the surveillances. The systems will continue to be able to perform their design functions of isolating containment during the evaluated accidents. Test procedures will continue to monitor the

leakage of these valves to ensure the design function will continue to be met. There is no impact on previously evaluated accidents since the valves will continue to close and seal or remain closed as originally assumed in the accident scenarios.

Therefore, the changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

Second Standard

Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

No.

This change does not involve a physical alteration to the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing any normal plant operation. The change does not alter assumptions made in the safety analyses or licensing basis. This change will not affect or degrade the ability of the Containment Purge System, Hydrogen Purge System, or Containment Air Release and Addition System valves to perform their specified safety functions. Therefore, the change does not create the possibility of a new or different kind of credible accident from any accident previously evaluated.

Third Standard

Does the proposed change involve a significant reduction in a margin of safety?

No.

SR 3.6.3.6 currently states: "The measured leakage rate for Containment Purge System and Hydrogen Purge System valves must be $\leq 0.05\ L_a$ (Design Leakage Rate) when pressurized to P_a (Design Containment Pressure). The measured leakage rate for Containment Air Release and Addition valves must be $\leq 0.01\ L_a$ when pressurized to P_a." These required maximum leak rates will not be changed by this amendment. Testing of these valves to measure leakage through the valve seats will continue, only at a different frequency based on past test results. This will be a nominal frequency of 18 months for the VP System and in accordance with 10CFR50, Appendix J, Option B for the VQ and VY Systems. Therefore, the proposed changes listed above do not involve a significant reduction in a margin of safety.

ATTACHMENT 4

ENVIRONMENTAL IMPACT STATEMENT CONSIDERATION

ENVIRONMENTAL IMPACT STATEMENT CONSIDERATION

Pursuant to 10 CFR 51.22(b), an evaluation of this license amendment request has been performed to determine whether or not it meets the criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) of the regulations.

> This amendment revises Technical Specification (TS) Section 3.6.3, Containment Isolation Valves. The change revises the required frequency of Surveillance Requirement (SR) 3.6.3.6 for the Containment Purge System, Hydrogen Purge System, and Containment Air Release and Addition System valves with resilient seals from "184 days and within 92 days after opening the valve" to be a frequency specified in accordance with the Containment Leakage Rate Testing Program. The amount of allowable leakage from these valves is not altered by this change.

Implementation of this amendment will have no adverse impact upon the Catawba units; neither will it contribute to any additional quantity or type of effluent being available for adverse environmental impact or personnel exposure.

It has been determined there is:

1. No significant hazards consideration,

2. No significant change in the types, or significant increase in the amounts, of any effluents that may be released offsite, and

3. No significant increase in individual or cumulative occupational radiation exposures involved.

Therefore, this amendment to the Catawba Technical Specifications and associated bases meets the criteria of 10 CFR 51.22(c)(9) for categorical exclusion from an environmental impact statement.

ATTACHMENT 5

Catawba Unit 1 and Unit 2
Containment Purge (VP) System,
Hydrogen Purge (VY) System, and
Containment Air Release and Addition (VQ) System
Valve Leakage

Catawba Unit 1 VQ & VY Leakage History (All valves are 4" Diameter) Units = standard cubic centimeters per minute of leakage (sccm)						
Penetration	**1M204**	**1M386**	**1M332**		**1M346**	
CIV	VQ16A	VQ2A	VY16	VY15B	VY17A	VY18B
Date/Leakage	3/17/04 (0)	2/16/04 (27)	2/4/04 (17)	2/4/04 (19)	4/27/04 (0)	2/4/04 (12)
	11/20/03 (0)	11/23/03 (4)	8/15/03 (0)	8/15/03 (6)	11/29/03 (0)	8/15/03 (12)
	10/1/03 (0)	9/4/03 (5)	2/24/03 (55)	2/2/4/03 (3)	5/21/03 (7)	2/24/03 (0)
	7/29/03 (0)	6/3/03 (15)	9/10/02 (0)	9/10/02 (25)	12/3/02 (0)	9/10/02 (3)
	5/7/03 (0)	11/19/02 (0)	5/13/02 (0)	5/13/02 (25)	6/18/02 (17)	6/18/02 (29)
	5/7/03 (0)	12/17/02 (21)	3/25/02 (0)	3/25/02 (20)	1/2/02 (0)	3/25/02 (0)
	2/11/03 (0)	9/25/02 (0)	11/6/01 (70)	11/6/01 (38)	7/17/01 (0)	11/6/01 (118)
	11/29/02 (0)	7/1/02 (0)	4/24/01 (0)	4/24/01 (2)	1/30/01 (0)	11/16/00 (0)
	8/27/02 (15)	5/7/02 (1)	11/2/00 (0)	11/2/00 (27)	11/16/00 (1)	5/23/00 (140)
	6/4/02 (12)	4/9/02 (15)	5/23/00 (0)	10/21/00 (16)	8/15/00 (0)	12/7/99 (39)
	5/7/02 (8)	11/15/02 (4)	12/7/99 (14)	5/23/00 (0)	2/29/00 (10)	6/22/99 (30)
	3/12/02 (0)	10/24/01 (0)	6/22/99 (14)	12/7/99 (50)	9/14/99 (6)	
	9/24/01 (29)	7/30/01 (290)	1/6/99 (43)	6/22/99 (8)		
	7/2/01 (0)	5/7/01 (20)		3/31/99 (0)		
	4/9/01 (0)	11/3/00 (0)				
	2/19/01 (0)	8/28/00 (11)				
	1/22/01 (0)	6/5/00 (10)				
	10/21/00 (19)	4/11/00 (17)				
	8/7/00 (20)	12/30/99 (6)				
	5/15/00 (19)	9/27/99 (8)				
	2/21/00 (0)	7/6/99 (3)				
	11/30/99 (43)	5/7/99 (7)				
	9/8/99 (0)					
	6/14/99 (0)					
	5/8/99 (12)					

Catawba Unit 1 VP Leakage History Units = standard cubic centimeters per minute of leakage (sccm)									
Penetration	**1M119**	**1M140**	**1M213**	**1M357**	**1M368**	**1M432**	**1M433**	**1M434**	**1M456**
Inside CIV	VP15A	VP19A	VP17A	VP7A	VP10A	VP4A	VP12A	VP9A	VP1B
Outside CIV	VP16B	VP20B	VP18B	VP6B	VP11B	VP3B	VP13B	VP8B	VP2A
Valve Diameter	24"	12"	12"	24"	24"	24"	24"	24"	24"
12/8/2003	322	87	140	230	113	230	99	103	340
7/8/2003	350	32	10	28	12	150	30	16	220
1/21/2003	370	47	28	76	180	235	185	184	218
8/6/2002	205	27	10	0	35	75	210	0	95
5/12/2002	430	59	25	102	5	190	140	125	285
2/19/2002	378	60	25	45	225	110	200	110	255
9/4/2001	0	50	0	0	0	160	135	5	190
6/13/2001	33	10	21	276	146	108	170	190	190
3/20/2001	405	92	38	20	60	234	140	17	255
11/11/2000	210	56	37	465	12	200	55	15	405
4/18/2000	195	18	17	160	22	145	149	195	160
11/3/1999	220	33	20	170	150	188	160	146	120
5/16/1999	203	20	58	130	2	350	166	350	315
12/30/1998	82	2	12	2	53	265	288	325	180
10/7/1998	220	24	2	219	43	236	218	310	219
6/1/1998	144	2.4	5	18	32	213	182	210	275

Catawba Unit 2 VQ & VY Leakage History (All valves are 4" diameter) Units = standard cubic centimeters per minute of leakage (sccm)						
Penetration	**2M204**	**2M386**	**2M332**		**2M346**	
CIV	VQ16A	VQ2A	VY16	VY15B	VY17A	VY18B
Date/Leakage	3/17/04 (122)	2/17/04 (86)	3/9/04 (37)	3/9/04 (0)	12/17/03 (0)	3/9/04 (0)
	12/22/03 (139)	12/03/03 (7)	9/23/03 (26)	9/23/03 (17)	6/30/03 (0)	9/23/03 (0)
	10/1/03 (145)	9/3/03 (5)	4/8/03 (13)	4/8/03 (13)	4/8/03 (0)	4/08/03 (9)
	7/29/03 (141)	6/3/03 (1)	10/21/02 (1)	10/21/02 (4)	1/14/03 (8)	10/21/02 (0)
	5/7/03 (154)	5/7/03 (13)	5/8/02 (1)	5/8/02 (133)	7/23/02 (16)	4/27/02 (0)
	3/12/03 (178)	12/17/02 (4)	10/16/01 (0)	10/16/01 (35)	1/29/02 (28)	10/16/01 (0)
	2/11/03 (10)	9/25/02 (0)	6/5/01 (0)	6/5/01 (135)	10/16/01 (0)	6/5/01 (0)
	5/7/02 (8)	7/1/02 (0)	12/20/00 (0)	12/20/00 (0)	3/13/01 (6)	12/20/00 (0)
	3/12/02 (178)	4/9/02 (13)	7/5/00 (0)	7/5/00 (0)	9/26/00 (21)	7/5/00 (0)
	10/3/01 (3)	10/17/01 (6)	4/4/00 (8)	4/4/00 (0)	4/4/00 (27)	4/4/00 (4)
	7/2/01 (122)	7/30/01 (0)	1/18/00 (5)	1/18/00 (3)	10/27/99 (0)	1/18/00 (4)
	4/9/01 (60)	5/7/01 (2)	8/5/99 (0)	8/5/99 (23)	5/12/99 (0)	8/5/99 (28)
	10/31/00 (88)	11/18/00 (14)	2/17/99 (0)	2/17/99 (0)		2/17/99 (0)
	8/7/00 (85)	8/28/00 (17)				
	5/15/00 (80)	6/5/00 (0)				
	4/5/00 (88)	3/25/00 (2)				
	2/21/00 (130)	12/29/99 (32)				
	11/30/99 (108)	9/27/99 (0)				
	9/8/99 (108)	7/6/99 (2)				
	6/17/99 (107)	4/12/99 (12)				
	3/22/99 (125)					

Catawba Unit 2 VP Leakage History Units = standard cubic centimeters per minute of leakage (sccm)									
Penetration	**2M119**	**2M140**	**2M213**	**2M357**	**2M368**	**2M432**	**2M433**	**2M434**	**2M456**
Inside CIV	VP15A	VP19A	VP17A	VP7A	VP10A	VP4A	VP12A	VP9A	VP1B
Outside CIV	VP16B	VP20B	VP18B	VP6B	VP11B	VP3B	VP13B	VP8B	VP2A
Valve Diameter	24"	12"	12"	24"	24"	24"	24"	24"	24"
3/16/2004	24	64	24	20	72	36	30	47	61
9/30/2003	226	22	59	8	116	55	3	36	199
3/21/2003	128	10	152	10	104	158	18	73	239
10/30/2002	83	30	25	240	10	19	29	90	68
5/22/2002	8	10	41	355	88	36	51	128	41
10/14/2001	64	10	152	380	54	76	153	196	114
9/4/2001	10	50	10	10	10	160	135	10	190
6/13/2001	33	10	21	276	146	108	170	190	190
3/20/2001	405	92	38	20	60	234	140	17	255
12/27/2000	138	13.6	31	312	166	23	260	182	127
7/11/2000	100	4.5	38	333	46	50	242	224	89
4/4/2000	125	10	49	260	161	125	222	205	118
1/24/2000	15	15	47	215	280	65	166	180	7
8/10/1999	198	14	35	375	53	42	280	212	42
2/24/1999	46	10	37	329	72	38	189	138	97
12/9/1998	41	2	34	325	60	38	97	177	70
10/14/1998	102	6	41	70	115	15	220	400	75