

August 11, 2000

MEMORANDUM TO: File

FROM: Thomas W. Alexion, Project Manager, Section 1 */RA/*
Project Directorate IV & Decommissioning
Division of Licensing Project Management

SUBJECT: ARKANSAS NUCLEAR ONE, UNITS 1 AND 2 RE: PROPOSED
LICENSE AMENDMENT TO TECHNICAL SPECIFICATIONS ON
LABORATORY TESTING OF ACTIVATED CHARCOAL (TAC NOS.
MA7280 AND MA7281)

The U. S. Nuclear Regulatory Commission (NRC) staff has had discussions with Entergy Operations, Inc., the licensee, on its November 23, 1999, application on "Proposed Amendment to Technical Specifications, Laboratory Testing of Activated Charcoal." This application was submitted in response to NRC Generic Letter (GL) 99-02, Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999.

In order to facilitate these discussions, the NRC provided the licensee with a preliminary list of questions. These draft questions do not represent final NRC positions and may get revised/eliminated as a result of discussions with the licensee.

The purpose of this memorandum is to place the attachment in the Public Document Room.

Docket No. 50-313
and 50-368

Attachment: As stated

August 11, 2000

MEMORANDUM TO: File

FROM: Thomas W. Alexion, Project Manager, Section 1 */RA/*
Project Directorate IV & Decommissioning
Division of Licensing Project Management

SUBJECT: ARKANSAS NUCLEAR ONE, UNITS 1 AND 2 RE: PROPOSED
LICENSE AMENDMENT TO TECHNICAL SPECIFICATIONS ON
LABORATORY TESTING OF ACTIVATED CHARCOAL (TAC NOS.
MA7280 AND MA7281)

The U. S. Nuclear Regulatory Commission (NRC) staff has had discussions with Entergy Operations, Inc., the licensee, on its November 23, 1999, application on "Proposed Amendment to Technical Specifications, Laboratory Testing of Activated Charcoal." This application was submitted in response to NRC Generic Letter (GL) 99-02, Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999.

In order to facilitate these discussions, the NRC provided the licensee with a preliminary list of questions. These draft questions do not represent final NRC positions and may get revised/eliminated as a result of discussions with the licensee.

The purpose of this memorandum is to place the attachment in the Public Document Room.

Docket No. 50-368

Attachment: As stated

DISTRIBUTION:

PUBLIC

PDIV-1 RF

Accession No.: ML003739910

OFFICE	PDIV-1/PM	PDIV-1/PM	PDIV-1/LA
NAME	TAlexion	CNolan	DJohnson
DATE	08/03/00	8/3/00	8/10/00

OFFICIAL RECORD COPY

NRC REQUEST FOR ADDITIONAL INFORMATION (RAI)

PLANT NAME: ARKANSAS NUCLEAR ONE - UNIT 1, TAC: MA7280

The following requests or questions refer to the Penetration Room Ventilation System and the Fuel handling Area Ventilation System, unless otherwise noted:

- 1) GL 99-02, under requested actions required each licensee to provide, in part, the charcoal bed depth, total residence time per bed depth, and penetration at which the current TS require the test to be performed for each ESF ventilation system.

Please refer to or provide docketed information stating:

- a) charcoal bed depth,
 - b) total residence time per bed depth, and
 - c) allowable penetration at which the current TS require the testing to be performed.
- 2) GL 99-02 states, "If the system has a face velocity greater than 110% of 0.203 m/s [40 ft/min], then the revised TS should specify the face velocity."

Under Section D in Attachment 1 of the November 23, 1999 letter (CNRO-99/00026), it states, "The affected systems for each facility have face velocities of approximately 40 ft/min, recognizing air flow distribution tolerances of $\pm 20\%$ are acceptable per RG [Regulatory Guide] 1.52. Therefore, this specific request is not applicable."

Concerning the actual and test face velocities:

- a) Please indicate the actual system face velocities and how they are calculated.

The actual system face velocities can be calculated by dividing the maximum accident condition system flow rates specified in the technical specification (TS) (nominal + typically 10% upper value) by the total exposed surface area of the charcoal filter media. Per GL 99-02, if this value is >110% of 40 ft/min, then the TS should be revised to specify that value as the test face velocity. (The guidance on calculation of the residence times in ASME AG-1-1997, Division II, Sections FD and FE, Articles I-1000, or in ANSI N510-1975 can be used to calculate the actual system face velocities).
 - b) Per GL 99-02, ASTM D3803-1989 is acceptable because it provides accurate and reproducible test results. Please justify why you are taking exception to the tolerance on test face velocity of 12.2 ± 0.3 m/min ($\pm 2.5\%$) that is specified in ASTM D3803-1989.
- 3) With respect to the Control Room Ventilation System, since the current TS call for laboratory charcoal testing in accordance with ASTM D3803-1989, ANO Unit 1 is considered a Group 1 plant under GL 99-02. Per GL 99-02, Requested Action No. 1, please provide the charcoal bed depth, the residence time per 2 in. of bed depth, the allowable test penetration, the test temperature and relative humidity (RH) at which the

Control Room Ventilation System is tested. If the RH is <95%, typically 70%, please indicate whether TS-controlled heaters are available whose capacity has been approved by the NRC to maintain the RH below 95% during accident conditions.

- 4) On pages 109a and 110i of the TS bases, in the last sentence of the fourth paragraph, it states, "If laboratory test results are unacceptable, all charcoal adsorbents in the system shall be replaced with charcoal adsorbents qualified according to Regulatory Guide 1.52." Since GL 99-02 indicates that ASTM D3803-1989 is the only test standard which provides accurate and reproducible test results, please justify why replacement charcoal should continue to be tested in accordance with Regulatory Guide 1.52.

NRC REQUEST FOR ADDITIONAL INFORMATION (RAI)

PLANT NAME: ARKANSAS NUCLEAR ONE - UNIT 2, TAC: MA7281

The following requests or questions refer to the Fuel handling Area Ventilation System, unless otherwise noted:

- 1) GL 99-02, under requested actions required each licensee to provide, in part, the charcoal bed depth, total residence time per bed depth, and penetration at which the current TS require the test to be performed for each ESF ventilation system.

Please refer to or provide docketed information stating:

- a) charcoal bed depth,
 - b) total residence time per bed depth, and
 - c) allowable penetration at which the current TS require the testing to be performed.
- 2) GL 99-02 states, "If the system has a face velocity greater than 110% of 0.203 m/s [40 ft/min], then the revised TS should specify the face velocity."

Under Section D in Attachment 1 of the November 23, 1999 letter (CNRO-99/00026), it states, "The affected systems for each facility have face velocities of approximately 40 ft/min, recognizing air flow distribution tolerances of $\pm 20\%$ are acceptable per RG [Regulatory Guide] 1.52. Therefore, this specific request is not applicable."

Concerning the actual and test face velocities:

- a) Please indicate the actual system face velocities and how they are calculated.

The actual system face velocities can be calculated by dividing the maximum accident condition system flow rates specified in the technical specification (TS) (nominal + typically 10% upper value) by the total exposed surface area of the charcoal filter media. Per GL 99-02, if this value is $>110\%$ of 40 ft/min, then the TS should be revised to specify that value as the test face velocity. (The guidance on calculation of the residence times in ASME AG-1-1997, Division II, Sections FD and FE, Articles I-1000, or in ANSI N510-1975 can be used to calculate the actual system face velocities).
 - b) Per GL 99-02, ASTM D3803-1989 is acceptable because it provides accurate and reproducible test results. Please justify why you are taking exception to the tolerance on test face velocity of 12.2 ± 0.3 m/min ($\pm 2.5\%$) that is specified in ASTM D3803-1989.
- 3) With respect to the Control Room Ventilation System, since the current TS call for laboratory charcoal testing in accordance with ASTM D3803-1989, ANO Unit 2 is considered a Group 1 plant under GL 99-02. Per GL 99-02, Requested Action No. 1, please provide the charcoal bed depth, the residence time per 2 in. of bed depth, the allowable test penetration, the test temperature and relative humidity (RH) at which the

Control Room Ventilation System is tested. If the RH is <95%, typically 70%, please indicate whether TS-controlled heaters are available whose capacity has been approved by the NRC to maintain the RH below 95% during accident conditions.