UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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ARLINGTON, TEXAS 76011-8064

Craig G. Anderson, Vice President,
Operations
Arkansas Nuclear One
Entergy Operations, Inc.
1448 S.R. 333
Russellville, Arkansas 72801-0967

SUBJECT: RESPONSE TO BACKFIT CLAIM REGARDING NRC INSPECTION REPORT 50-313/01-06; 50-368/01-06

Dear Mr. Anderson:

As documented in Inspection Report 50-313;368/2001-06, the NRC identified an unresolved issue in the Unit 1 emergency diesel generator corridor (Fire Zone 98J) and the Unit 1 north electrical switchgear room (Fire Zones 99M) concerning use of manual actions in lieu of providing protection for cables associated with equipment necessary for achieving and maintaining hot shutdown as specified in 10 CFR Part 50, Appendix R, Section III.G.2. This issue was considered unresolved pending further NRC review and the determination of its risk. In a re-exit meeting held on August 30, 2001, the NRC informed Entergy that the use of manual actions in lieu of ensuring cables or equipment of redundant trains of systems necessary to achieve and maintain hot shutdown conditions were free of fire damage was a violation of 10 CFR Part 50, Appendix R, Section III.G.2. The issue remained unresolved pending completion of the risk determination.

Your letter of September 28, 2001, claimed that our position that manual actions cannot be used to comply with 10 CFR Part 50, Appendix R, Section III.G.2. was a backfit. At issue is your use of manual actions for achieving and maintaining hot shutdown conditions in the event of a fire in the Unit 1 emergency diesel generator corridor (Fire Zone 98J) and north switchgear room (fire Zones 99M). In this letter, you asserted that the NRC has accepted such manual actions in the past, and stated that our position with respect to disallowing the use of manual actions for complying with Section III.G.2 of Appendix R should be considered a backfit that is generic to all plants.

On October 26, 2001, and again on January 17, 2002, we convened a backfit panel in accordance with NRC Management Directive 8.4, "NRC Program for Management of Plant-Specific Backfitting of Nuclear Power Plants," to review your backfit claim as stated in

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your letter of September 28, 2001. After careful consideration of your appeal, we have determined that (1) the NRC did not impose a regulatory staff position that is new or different from a previously applicable staff position relative to the requirements of 10 CFR Part 50, Appendix R, Section III.G.2; (2) the NRC did not approve the use of manual actions for complying with 10 CFR Part 50, Appendix R, Section III.G.2 in the Unit 1 diesel generator corridor and north switchgear room in lieu of meeting the requirements of 10 CFR Part 50, Appendix R, Section III.G.2.a, III.G.2.b, or III.G.2.c; and (3) your methodology for using manual actions (in the event of a fire in the Unit 1 diesel generator corridor and north switchgear room), in lieu of ensuring that one train of redundant equipment needed for achieving and maintaining hot shutdown conditions was free of fire damage, does not comply with the requirements of 10 CFR Part 50, Appendix R, Section III.G.2. The bases for these conclusions are described in the Enclosure. Licensing basis documents we reviewed in reaching these conclusions, and relevant excerpts and quotes from those documents are contained in the Attachments. Accordingly, Unresolved Item 50-313;368/0106-02 has been reclassified as an Apparent Violation pending NRC's assessment of the risk significance associated with this finding.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/ADAMS.html (the Public Electronic Reading Room).

Should you have any questions concerning this matter, please contact me at (817) 860-8225 or Mr. A. T. Howell at (817) 860-8180.

Sincerely,

EWS

Ellis W. Merschoff
Regional Administrator

Enclosures: As stated

Dockets: 50-313; 50-368
Licenses: DPR-51; NPF-6

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TAlexion **(TWA)**
NRR Event Tracking System **(IPAS)**

DOCUMENT: R:_ano\2001\an0106backfit-rln.wpd

RIV:DRS/PSB	C:EMB	D:DRS	C:DRP/D	D:DRP	D:DNMS
RLNease/lmb	CSMarschall	ATHowell III	LJSmith	KEBrockman	DDChamberlain

RC	ACES:ES	D:ACES	OGC	OGC	DRA
KDSmith	GMVasquez	GFSanborn	GSMizuno	DCDambly	TPGwynn
RA					
EWMerschoff					

*previously concurred

[redacted]

ENCLOSURE

BACKFIT ANALYSIS

In a letter dated September 28, 2001, Entergy Operations, Inc. (Entergy), claimed that Region IV's position that manual actions cannot be used to comply with 10 CFR Part 50, Appendix R, Section III.G.2. was a backfit, ~~generic to all plants.~~ Backfitting is defined in 10 CFR 50.109 "as the modification of or addition to systems, structures, components, or design of a facility; or the design approval or manufacturing license for a facility; or the procedures or organization required to design, construct or operate a facility; any of which may result from a new or amended provision in the Commission rules or the imposition of a regulatory staff position interpreting the Commission rules that is either new or different from a previously applicable staff position..."

On October 26, 2001, the NRC convened a backfit panel to review Entergy's backfit claim as presented in their letter of September 28, 2001, and accompanying attachments. As a result of that meeting, the panel requested an evaluation of the following four key points presented in Entergy's backfit claim.

I. NRC's Past and Present Positions Regarding the Use of Manual Actions for Meeting the Requirements of 10 CFR Part 50, Appendix R, Section III.G

In their letter dated September 28, 2001, Entergy stated that the NRC had accepted on many occasions, including at ANO, the use of manual actions for complying with 10 CFR Part 50, Appendix R, Section III.G.2.[1] Entergy further stated tha[redacted]

In 1981, the NRC issued 10 CFR 50.48, "Fire protection," and Appendix R to 10 CFR Part 50, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979." Arkansas Nuclear One (ANO) Unit 1 was licensed in 1974, and Unit 2 was licensed in 1978; therefore, for both units, the licensee was required to meet the provisions of 10 CFR Part 50,

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[1]Entergy claimed that certain statements in NRC inspection report[redacted] provide an NRC position that permits the use of manual actions for achieving post-fire safe shutdown[redacted] The statements quoted by Entergy were taken from the description of the scope of the inspection, not from the inspection findings section of the reports. The fire protection triennial inspection scope consists of a review of the licensee's methodology for reaching safe shutdown, including any manual actions that are credited in that methodology. These scope statements are not an endorsement for the use of manual actions for meeting Section III.G.2 of Appendix R, merely statements describing what the inspectors reviewed[redacted]

[redacted]

Appendix R, Sections III.G, III.J, and III.O.

10 CFR Part 50, Appendix R, Section III.G, "Fire protection of safe shutdown capability," provides the requirements for ensuring that at least one train of equipment needed for safe shutdown is free of fire damage. As discussed in the Statements of Consideration for 10 CFR 50.48 and 10 CFR Part 50, Appendix R, it is not possible to predict the conditions under which fires may occur and propagate; therefore, the Commission established three specific methods for protecting safe shutdown equipment so that at least one train remains free of fire damage. These three methods are specified in Section III.G.2 of Appendix R. The first method is separation of redundant safe shutdown trains and associated circuits by 3-hour fire rated barriers. The second method is a combination of separation of redundant safe shutdown trains and associated circuits by a 1-hour fire rated barrier and automatic fire suppression and detection capability. The third method is a combination of separation of redundant safe shutdown trains and associated circuits by 20 feet or more o[redacted]pace and automatic fire suppression and detection systems in the area. If these conditions cannot be met, an exemption from Section III.G.2, or an alternative or dedicated safe shutdown capability specified in 10 CFR Part 50, Appendix R, Section III.G.3 is required. [redacted] 5

The requirements for ensuring that at least one train of equipment needed for safe shutdown is free of fire damage is described and discussed in numerous generic NRC documents such as,

- Statements of Consideration for 10 CFR 50.48 and 10 CFR Part 50, Appendix R
- Generic Letter 81-12
- Clarification of Generic Letter 81-12
- Information Notice 84-09
- NUREG 0800, Standard Review Plan 9.5.1, "Fire Protection Program"

In addition, the NRC staff described the same specific requirements for ensuring one train of safe shutdown equipment is free of fire damage in ANO-specific licensing basis documents, such as safety evaluation reports and exemptions. In these documents, the NRC restated the requirements of Appendix R, Section III.G and discussed the three methods for ensuring that one train of equipment and cables necessary for achieving and maintaining hot shutdown conditions was free of fire damage, as required by Section III.G.2. The NRC further explained that if these methods could not be met, then an alternative fire protection configuration must be provided in accordance with Section III.G.3 of Appendix R.

[redacted] 5

Conclusion The regulations, statements of consideration, and generic correspondence, as well as ANO-specific documentation are in agreement concerning the use of manual actions for achieving and maintaining hot shutdown conditions as required in Section III.G of Appendix R to 10 CFR Part 50. As these documents show, the NRC has not in the past and does not currently consider manual actions to be acceptable for complying with 10 CFR Part 50, Appendix R, Section III.G.2, unless specifically reviewed and approve[redacted] The [redacted]

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panel concludes that the position to disallow the use of manual actions for meeting 10 CFR Part 50, Appendix R, Section III.G.2 is not an imposition of a regulatory staff position interpreting the Commission rules that ~~are~~ is either new or different from a previously applicable staff position. Therefore, this position is not a backfit [redacted] specific to ANO. [redacted] S

II. ANO's Position Regarding 10 CFR Part 50, Appendix R, Section III.G

In a letter dated September 28, 2001, Entergy summarized their position concerning the use of manual actions for meeting the requirements of 10 CFR Part 50, Appendix R, Section III.G as:

"1. *The use of manual actions to operate components ....outside the fire area is permitted by 10CFR50 Appendix R, Section III.G.1 and does not violate Section III.G.2;*

2. *Compliance with 10CFR50 Appendix R, Section III.G.2 does not require protective features on circuits that are not required to function and, therefore, are not necessary systems required to achieve safe shutdown, and regardless of fire damage cannot prevent the ability to achieve safe shutdown conditions.* "

Section III.G.1 of Appendix R to 10 CFR Part 50 provides the overall fire protection objective to protect equipment so that in the event of a fire in any fire area: a. one train of [redacted] necessary for reaching hot shutdown conditions (from either the control room or emergency control stations) is free of fire damage; and b. [redacted] necessary for reaching cold shutdown conditions (from either the control room or emergency control stations) can be repaired within 72 hours. Section III.G.1.a. can be met by ensuring safe shutdown [redacted] is free from fire damage as specified in Section III.G.2, or by using an alternative safe shutdown capability specified in Section III.G.3. While Section III.G.1.a. contemplates the use of manual actions, these are provided in the context of alternative or dedicated shutdown under Section III.G.3. S

Section III.G.2 provides three acceptable methods for ensuring [redacted] necessary for achieving and maintaining hot shutdown conditions is free of fire damage. None of these methods permits the use of manual actions to mitigate the effects of a fire on safe shutdown equipment. Rather, these methods have the objective of preventing fire damage through the use of specific protection features. Section III.G.2 also requires these same fire protection features for circuits whose damage (by fire) could [redacted] of safe shutdown [redacted] Contrary to Entergy's position (2) above [redacted] S

If a licensee cannot meet the requirements of Section III.G.2 for certain fire areas, then an alternative or dedicated shutdown capability is required as outlined in Section III.G.3 of Appendix R. Under Section III.G.3, manual actions may be taken. The goals and requirements associated with alternative and dedicated shutdown capability are specified in

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Section III.L of Appendix R, and include a requirement that alternative shutdown capability be implemented by procedure. Another option would be for the licensee to request an exemption from those portions of Section III.G.2 that cannot be met. [redacted]

Conclusion: For the ANO plant, Entergy must meet the requirements of 10 CFR Part 50, Section III.G.1 and either III.G.2 or III.G.3 for the protection of equipment necessary for achieving and maintaining hot shutdown conditions, or request an exemption. Section III.G.2 provides three specific methods for preventing fire damage to (1) equipment and cables necessary for achieving and maintaining safe shutdown, and (2) circuits whose [redacted] could adversely affect safe shutdown. Section III.G.3 provides the option of using alternative or dedicated shutdown capability for those fire areas in which the licensee cannot meet the requirements of Section III.G.2. Therefore, the licensee's methodology to credit the use of manual actions for meeting the requirements of Section III.G.2 is not permitted, unless these actions are specifically reviewed and approved by the NRC and documented in a safety evaluation report.

III. NRC Review and Approval of Manual Actions for Meeting the Requirements of 10 CFR Part 50, Appendix R, Section III.G in 14 Fire Zones at ANO

In their letter of September 28, 2001, Entergy [redacted]

- A summary of a meeting between NRC and ANO documented by the NRC in a letter dated September 3, 1982 [redacted]
- ANO's response to the RAI dated October 5, 1982, [redacted]

The subject line of the meeting summary of September 3, 1982, reads, "SUMMARY OF MEETING WITH ARKANSAS POWER AND LIGHT COMPANY (AP&L) ON AUGUST 31, 1982, CONCERNING THE ALTERNATE SAFE SHUTDOWN CAPABILITY IN THE EVENT OF A FIRE AT ARKANSAS NUCLEAR ONE UNITS NOS. 1 & 2 (ANO-1 & 2)." Clearly, the meeting was held and [redacted] in the context of alternative shutdown, which is governed by 10 CFR Part 50, Appendix R, Section III.G.3. The NRC subsequently issued an SER dated May 13, 1983, which provided the staff's review of the licensee's methodology for meeting III.G.3 and III.L. In this SER, the staff referenced the meeting of August 31, 1982, and the licensee's October 5, 1982, letter. It is clear that in their SER of May 13, 1983, the NRC reviewed manual actions credited [redacted] in the context of Section III.G.3, stating, "All other areas of the plant not required to have alternate safe shutdown will comply with the requirements of Section III.G.2 of Appendix R,

[redacted]

unless an exemption request has been approved by the staff." The licensee did not identify Fire Zones 98J and 99M [redacted] equiring some sort of manual action [redacted]

Conclusion: [redacted] either to comply with Section III.G.2 [redacted] or request an exemption. In conclusion, for Fire Zones 98J and 99M, the NRC did not review and approve of the use of manual actions [redacted]

Alleged [redacted]

IV. NRC's Tacit Approval of the Licensee's Methodology for Complying with 10 CFR Part 50, Appendix R, Section III.G

In their letter of September 28, 2001, Entergy stated that in 1982, they submitted to the NRC a description of their methodology for complying with Appendix R which included a statement that under certain conditions credit for manual operation of equipment was taken. Entergy further stated that because this statement was not challenged in subsequent NRC correspondence or safety evaluation reports, this silence constituted tacit approval of the use of manual actions, thus making it part of the ANO licensing basis.

[redacted] In a letter dated July 1, 1982, the licensee submitted the results of their Appendix R compliance review. [redacted] the licensee stated,

> *"In certain cases, credit for manual operation of equipment was taken if controls (and power for valves) could [redacted] be damaged by a fire. Such credit was taken only if:*
>
> *a. the component to be operated is not located in the affected fire zone, although the cable may be damaged by fire;*
>
> *b. sufficient time is available to perform the required manual actions; and*
>
> *c. personnel are available, beyond the fire brigade and minimum operations shift crew limitations, to perform the manual actions."*

[redacted] the licensee did not perform an analysis that demonstrated sufficient time was available or sufficient trained personnel were available to take all the actions required to [redacted]

mitigate all the failures which could occur as a result of a fire in Fire Zones 98J and 99M. Even if the NRC [redacted]

Conclusion: Even if, as Entergy claims, the NRC tacitly approved the use of manual actions for meeting Section III.G.2 of Appendix R, this approval is dependent on the licensee doing so under the conditions described [redacted] The licensee did not [redacted] met these conditions for [redacted] the use of manual actions [redacted]

[redacted]

ATTACHMENT 1

NRC GENERIC STATEMENTS RELEVANT TO APPENDIX R, SECTION III.G.2

FIRE PROTECTION REGULATIONS

10 CFR 50.48, *"Fire protection."*

(b) *"Appendix R to this part establishes fire protection features required to satisfy Criterion 3 of Appendix A to this part with respect to certain generic issues for nuclear power plants licensed to operate before January 1, 1979.*

(2) *With respect to all other fire protection features covered by Appendix R, all nuclear power plants licensed to operate before January 1, 1979, must satisfy the applicable requirements of Appendix R to this part, including specifically the requirements of Sections III.G, III.J, and III.O."*

10 CFR Part 50, Appendix R, Paragraph III.G, *"Fire protection of safe shutdown capability."*

1. *"Fire protection features shall be provided for structures, systems, and components important to safe shutdown. These features shall be capable of limiting fire damage so that:*

   a. *One train of systems necessary to achieve and maintain hot shutdown conditions from either the control room or emergency control station(s) is free of fire damage; and*

   b. *Systems necessary to achieve and maintain cold shutdown from either the control room or emergency control station(s) can be repaired within 72 hours.*

2. *Except as provided for in paragraph G.3 of this section, where cables or equipment, including associated non-safety circuits that could prevent operation or cause maloperation due to hot shorts, open circuits, or shorts to ground, of redundant trains of systems necessary to achieve and maintain hot shutdown conditions are located within the same fire area outside of primary containment, one of the following means of ensuring that one of the redundant trains is free of fire damage shall be provided:*

   a. *Separation of cables and equipment and associated non-safety circuits of redundant trains by a fire barrier having a 3-hour rating. Structural steel forming a part of or supporting such fire barriers shall be protected to provide fire resistance equivalent to that required of the barrier;*

   b. *Separation of cables and equipment and associated non-safety circuits of redundant trains by a horizontal distance of more than 20 feet with no*

intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area; or

c. Enclosure of cable and equipment and associated non-safety circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area; . . .

3. Alternative or dedicated shutdown capability and its associated circuits, independent of cables, systems or components in the area, room or zone under consideration, shall be provided:

a. Where the protection of systems whose function is required for hot shutdown does not satisfy the requirement of paragraph G.2 of this section; or

b. Where redundant trains of systems required for hot shutdown located in the same fire area may be subject to damage from fire suppression activities or from the rupture or inadvertent operation of fire suppression systems.

In addition, fire detection and a fixed fire suppression system shall be installed in the area, room, or zone under consideration."

STATEMENTS OF CONSIDERATION for 10CFR50.48 and 10 CFR PART 50, APPENDIX R

1. **As shown below, in the statements of consideration for 10 CFR 50.48 and 10 CFR Part 50, Appendix R (FR 76606, Vol. 45 No. 225, November 19, 1980), the Commission explained that there were three ways to ensure that one means of achieving safe shutdown is available (Appendix R.III.G.2), and that if none of these three methods is feasible, then alternative or dedicated safe shutdown capability is required (Appendix R. III.G.3).**

"G. Protection of Safe Shutdown Capability Technical Basis. The objective for the protection of safe shutdown capability is to ensure that at least one means of achieving and maintaining safe shutdown conditions will remain available during and after any postulated fire in the plant. Because it is not possible to predict the specific conditions under which fires may occur and propagate, the design basis protective features are specified rather than the design basis fire. Three different means for protecting the safe shutdown capability outside of containment are acceptable. The first means is separation of redundant safe shutdown trains and associated circuits by means of 3-hour fire

rated barriers. The second means is a combination of separation of redundant safe shutdown trains and associated circuits by a 1-hour fire rated barrier and automatic fire suppression and detection capability for both redundant trains. The third means, which may be used only when redundant trains and associated circuits are separated by 20 feet or more of clear space, requires automatic fire suppression and detection systems in the area. An alternative or dedicated safe shutdown capability independent of the fire area is required if fire protection for safe shutdown capability cannot be provided as outlined above . . . "

GENERIC NRC GUIDANCE

Generic Letter (GL) 81-12: As shown below, in the first paragraph of GL 81-12 and again in Enclosure 2 to GL 81-12, the NRC explained that cables for or associated with redundant safe shutdown systems must be protected from the effects of fire by the methods described in Section III.G.2 of Appendix R to 10 CFR Part 50 (Appendix R), or provided with alternative or dedicated shutdown capability as described in Section III.G.3 of Appendix R.

> *"Paragraph 50.48(b) of 10 CFR Part 50, which became effective on February 17, 1981, requires all nuclear plants licensed to operate prior to January 1, 1979 to meet the requirements of Section III.G, III.J and III.O of Appendix R to 10 CFR Part 50 regardless of any previous approvals by the Nuclear Regulatory Commission (NRC) for alternative design features for those items. This would require each licensee to reassess all those areas of the plant ". . . where cables or equipment, including associated non-safety circuits, that could prevent operation or cause maloperation due to hot shorts, open circuits or shorts to ground or (sic) redundant trains of systems necessary to achieve and maintain hot shutdown conditions are located within the same fire area outside of primary containment . . ."* to determine whether the requirements of Section III.G.2 of Appendix R are satisfied. If not, the licensee must provide alternative shutdown capability in conformance with Section III.G.3 or request an exemption if there is some justifiable basis. . . *Quoted from Section III.G.2 of Appendix R to 10 CFR Part 50 . . ."*

> *"Section III.G of Appendix R to 10 CFR Part 50 required cabling for or associated with redundant safe shutdown systems necessary to achieve and maintain hot shutdown conditions be separated by fire barriers having a three-hour rating or equivalent protection (see Section III.G.2 of Appendix R) . . . Safety related and non-safety related cables that are associated with the equipment and cables of the alternative, or dedicated method of shutdown are those that have a separation from the fire area less than that required by Section III.G.2 of Appendix R to 10 CFR 50 . . ."*

Clarification of GL 81-12: The NRC further clarified the requirements of Appendix R, Section III.G in a memorandum from Darrell G. Eisenhut, Director, Division of Licensing, NRR, to Roger J. Mattson, Director, Division of system Integration, NRR, dated March 22, 1982, which was sent to all licensees.

> *"Using the requirements of Sections III.G and III.L of Appendix R, the capability to achieve hot shutdown must exist given a fire in any area of the plant in conjunction with a loss of offsite power for 72 hours. Section III.G of Appendix R provides four methods for ensuring that the hot shutdown capability is protected from fires. The first three options as defined in Section III.G.2 provides methods for protection from fires of equipment needed for hot shutdown:*
>
> 1. *Redundant systems including cables, equipment, and associated circuits may be separated by a three-hour fire rated barrier; or,*
>
> 2. *Redundant systems including cables, equipment and associated circuits may be separated by a horizontal distance of more than 20 feet with no intervening combustibles. In addition, fire detection and an automatic fire suppression system are required; or*
>
> 3. *Redundant systems including cables, equipment and associated circuits may be enclosed by a one-hour fire rated barrier. In addition, fire detectors and an automatic fire suppression system are required.*
>
> *The last option as defined by Section III.G.3 provides an alternative shutdown capability to the redundant trains damaged by a fire.*
>
> 4. *Alternative shutdown must be independent of the cables, equipment and associated circuits of the redundant systems damaged by the fire."*

Information Notice (IN) 84-09: In 1984, the NRC issued IN 84-09, "Lessons Learned from NRC Inspections of Fire Protection Safe Shutdown Systems (10 CFR 50, Appendix R)," which discussed the requirements for protecting safe shutdown equipment and cables. Section III, "Protection of Equipment Necessary To Achieve Hot Shutdown," of IN 84-09 states,

> *"Appendix R, Section III.G.1, requires that fire protection features shall be provided for structures, systems, and components important to safe shutdown. These features shall be capable of limiting fire damage so that one train of systems necessary to achieve and maintain a hot shutdown condition from either the control room or emergency control station(s) is free of fire damage.*
>
> *Sections III.G.2 and III.G.3 specify four alternatives that may be implemented outside of primary containment to assure that one redundant train of equipment, cabling and associated circuits necessary to achieve and maintain hot shutdown*

remains free of fire damage. The alternatives are:

1. *Separation of redundant trains of equipment, cabling, and associated circuits by a three-hour fire barrier.*

2. *Enclosure of redundant trains of equipment, cabling, and associated circuits by a one-hour fire barrier with fire detection and automatic fire suppression systems installed in the area.*

3. *Separation of redundant trains of equipment, cabling, and associated circuits by a horizontal distance of 20 feet with no intervening combustibles and with fire detection and automatic fire suppression systems installed in the area.*

4. *Installation of alternative or dedicated shutdown capability independent of the equipment, cabling, and associated circuits under consideration, and installation of fire detection and fixed fire suppression systems in the area containing this alternative or dedicated shutdown capability."*

NUREG 0800, STANDARD REVIEW PLAN 9.5.1, "FIRE PROTECTION PROGRAM"

In 1981, the NRC issued Revision 3 of NUREG 0800, Standard Review Plan Section 9.5.1, "Fire Protection Program" as guidance to NRC staff in performing fire protection program reviews. NUREG 0800 included Revision 2 to Branch Technical Position CMEB 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants," which provided guidance acceptable for implementing 10 CFR 50.48 and Appendix R. Section C.5.b, "Safe Shutdown Capability," of Branch Technical Position CMEB 9.5-1 states,

"(1) Fire protection features should be provided for structures, systems, and components important to safe shutdown. These features should be capable of limiting fire damage so that:

(a) One train of systems necessary to achieve and maintain hot shutdown conditions from either the control room or emergency control stations(s) is free of fire damage; and

(b) Systems necessary to achieve and maintain cold shutdown from either the control room or emergency control stations(s) can be repaired within 72 hours.

(2) To meet the guidelines of Position C5.b.1, one of the following means of ensuring that one of the redundant trains is free of fire damage should be provided:

(a) Separation of cables and equipment and associated circuits of

redundant trains by a fire barrier having a 3-hour rating. Structural steel forming part of or supporting such fire barriers should be protected to provide fire resistance equivalent to that required of the barrier;

(b) Separation of cables and equipment and associated circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system should be installed in the fire area; or

(c) Enclosure of cable and equipment and associated circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system should be installed in the fire area.

(3) If the guidelines of Positions C5.b.1 and C5.b.2 cannot be met, then alternative or dedicated shutdown capability and its associated circuits, independent of cables, systems or components in the area, room, or zone under consideration should be provided."

ATTACHMENT 2

DOCKETED INFORMATION RELATIVE TO FIRE PROTECTION AT ANO

NRC DOCUMENTS

Meeting Summary and Request for Additional Information Dated September 3, 1982:

The Subject lines states,

> *"SUMMARY OF MEETING WITH ARKANSAS POWER AND LIGHT COMPANY (AP&L) ON AUGUST 31, 1982, CONCERNING THE ALTERNATE SAFE SHUTDOWN CAPABILITY IN THE EVENT OF A FIRE AT ARKANSAS NUCLEAR ONE UNITS NOS. 1 & 2 (ANO-1 & 2)"*

Enclosure 1 states,

> "2. *For the fourteen fire zones that the licensee indicates are in full compliance with Appendix R, but require some sort of manual or non-routine operation, the licensee should describe the safe shutdown equipment and cables that would be effected by a fire and the specific operator actions that would be required to obviate these effects."*

Exemption and SER Dated March 22, 1983:

Section II of the Exemption states,

> *"Section III.G of Appendix R requires fire protection for equipment important to safe shutdown. Such fire protection is achieved by various combinations of fire barriers, fire suppression systems, fire detectors, and separation of safety trains (III.G.2) or alternative safe shutdown equipment free of the fire area (III.G.3). The objective of this protection is to assure that one train of equipment needed for hot shutdown would be undamaged by fire, and that systems needed for cold shutdown could be repaired within 72 hours."*

Section IV of the Exemption states,

> *"The licensee has indicated that enclosure of the corridor A-train conduits in a one-hour rated fire barrier and separation of the DC equipment room from the corridor by three-hour rated fire barriers will be provided. With these modifications, the area will comply with Section III.G of Appendix R, and no exemption is needed."*

Section 1.0 of the SER states,

"Section III.G.2 requires that one train of cables and equipment necessary to achieve and maintain safe shutdown be maintained free of fire damage by one of the following means:

a. Separation of cables and equipment and associated non-safety circuits of redundant trains by a fire barrier having a 3-hour rating. Structural steel forming a part of or supporting such fire barriers shall be protected to provide fire resistance equivalent to that required of the barrier;

b. Separation of cables and equipment and associated non-safety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area; or

c. Enclosure of cable and equipment and associated non-safety circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area.

If these conditions are not met, Section III.G.3 requires alternative shutdown capability independent of the fire area of concern. It also requires a fixed suppression system installed in the fire area of concern if it contains a large concentration of cables or other combustibles.

These alternative requirements are not deemed to be equivalent for all configurations; however, they provide equivalent protection for those configurations in which they are accepted.

Because it is not possible to predict the specific conditions under which fires may occur and propagate, the design basis protective features are specified in the rule rather than the design basis fire. Plant specific features may require protection different than the measures specified in Section III.G. In such a case, the licensee must demonstrate, by means of a detailed fire hazards analysis, that existing protection or existing protection in conjunction with proposed modifications will provide a level of safety equivalent to the technical requirements of Section III.G of Appendix R.

In summary, Section III.G is related to fire protection features for ensuring that systems and associated circuits used to achieve and maintain safe shutdown are free of fire damage. Fire protection configurations must either meet the specific requirements of Section III.G or an alternative fire protection configuration must be justified by a fire hazards analysis."

Section 8.0 of the SER states,

". . . The corridor contains primarily B-train cables, however there is one A-train

conduit in the corridor. ... By letter dated November 11, 1982, the licensee proposed to enclose the single A-train conduit in the corridor in a one-hour rated barrier."

"The level of protection provided for the corridor area and D.C. equipment room meets Section III.G; therefore, and exemption is not needed."

SER dated May 13, 1983:

"Introduction," of the SER states,

"By submittals dated July 1 and July 29, 1982, the licensee described the means by which safe shutdown can be achieved in the event of fire and proposed modifications to the Arkansas Nuclear One Units 1 and 2 to meet the requirements of Appendix R to 10 CFR 50, Items III.G.3 and III.L. Additional information and clarification was obtained through a meeting held on August 31, 1982, and through a telephone conference call on October 29, 1982. The licensee subsequently documented their responses in Letters dated October 5 and November 1[1], 1982."

Section C. "Remaining Plant Areas," of the SER states,

"All other areas of the plant not required to have alternate safe shutdown will comply with the requirements of Section III.G.2 of Appendix R, unless an exemption request has been approved by the staff."

Exemption and SER Dated October 26, 1988:

The Exemption states,

"Section III.G of Appendix R requires fire protection for equipment important to post-fire shutdown. Such fire protection is achieved by various combinations of fire barriers, fire suppression systems, fire detectors, and separation of safety trains (III.G.2) or alternate post-fire shutdown equipment free of the fire area (III.G.3). The objective of this protection is to assure that one train of equipment needed for hot shutdown would be undamaged by fire, and that systems needed for cold shutdown could be repaired within 72 hours (III.G.1)."

Section 1.0 of the SER issued with the Exemption states,

"Section III.G.2 requires that one train of cables and equipment necessary to achieve and maintain safe shutdown be maintained free of fire damage by one

of the following means:

a. Separation of cables and equipment and associated non-safety circuits of redundant trains by a fire barrier having a 3-hour rating. Structural steel forming a part of or supporting such fire barriers shall be protected to provide fire resistance equivalent to that required of the barrier;

b. Separation of cables and equipment and associated non-safety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area; or

c. Enclosure of cable and equipment and associated non-safety circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area.

If these conditions are not met, Section III.G.3 requires an alternative shutdown capability independent of the fire area of concern. It also requires a fixed fire suppression system be installed in the fire area of concern if it contains a large concentration of cables or other combustibles. These alternative requirements are not deemed to be equivalent; however, they provide equivalent protection for those configurations in which they are accepted.

Because it is not possible to predict the specific conditions under which fires may occur and propagate, the design basis protective features are specified in the rule rather than a design basis fire. Plant specific features may require protection different than the measures specified in Section III.G. In such a case, the licensee must demonstrate, by fire hazards analysis, that existing protection or existing protection in conjunction with proposed modifications will provide a level of safety equivalent to the technical requirements of Section III.G of Appendix R.

In summary, Section III.G is related to fire protection features for ensuring that systems and associated circuits used to achieve and maintain safe shutdown are free of fire damage. Fire protection configurations must either meet the specific requirements of Section III.G or another fire protection configuration must be justified by a fire hazards analysis."

LICENSEE SUBMITTALS

Licensee letter dated July 1, 1982:

Section I, "Introduction," of this submittal, states,

> *" 6. In certain cases, credit for manual operation of equipment was taken if controls (and power for valves) could possibl[y] be damaged by a fire. Such credit was taken only if:*
>
> *a. the component to be operated is not located in the affected fire zone, although the cable may be damaged by fire;*
>
> *b. sufficient time is available to perform the required manual actions; and*
>
> *c. personnel are available, beyond the fire brigade and minimum operations shift crew limitations, to perform the manual actions."*

Section 3 of this submittal states,

> *"1. For the service water pumps, install breakers outside of zones 100-M and 99-M so the B service water pump may be powered from either the red or the green bus. This pump can therefore be assured of power from the unaffected switchgear room, and be able to isolate from faults in the switchgear room where the fire occurs. ... Outside of zones 99M and 100-N, the new service water pump B circuit breakers will be located in different zones from the pump A and pump C cabling.*
>
> *2. For the makeup pumps, similar modifications as those described above for the service water pumps will be made to assure that a fire in either switchgear room will not cause loss of all makeup pump capability.*
>
> *With these modifications this zone will comply with Appendix R."*

Section 4 of this submittal states,

> *"This zone is predominantly of the "green" or "B" safety division, although certain cables associated with the "red" or "A" division are also located in the corridor portion of the zone. The "A" cables in this zone are routed in conduit and are predominately associated with the "red" D.C. equipment room."*
> *"The "red" division cabling located in the corridor that is required for safe shutdown will be wrapped in a 1-hour fire barrier. The circuits involved are the power supplies to the RS panels [120V ac to vital instrumentation] which are located in the*

control room. With the suppression system in this area and the addition of the 1-hour fire barrier, the corridor portion of this zone will comply with Appendix R.

Following modifications described above, this zone will substantially comply with Appendix R; however, two exemptions are requested for this zone:

1. *Omission of a complete 3-hour fire barrier separating "red" D.C. equipment room from the corridor; and*

2. *Omission of sprinkler coverage over trays and equipment in the "red" D.C. equipment room."*

Licensee Letter dated October 5, 1982:

In this letter of October 5, 1982, as requested by the NRC in an August 31,1982, meeting, the licensee provided information concerning the following fourteen fire zones they had determined to be in full compliance with Appendix R, but which required some sort of manual or non-routine operation: 149E, 67U, 68P, 128E, 170Z, 38Y, 79U, 112I, 46Y, 47Y, 2084DD, 2111T, 2097X, and 2155A.

Licensee letter dated November 11, 1982, states,

"Modifications to this zone will be made as stated in our July submittal except for those designed to "separate" the corridor area from the "red" D.C. equipment room. This separation will be accomplished by the addition of a 3-hour rated fire door and fire dampers in the ventilation ducts. . . With this modification, no exemptions are required for zone 98J."

ATTACHMENT 3

LICENSING BASIS DOCUMENTS REVIEWED

DATE	TYPE	DESCRIPTION
July 1, 1982	Letter to NRC	Results of ANO's Appendix R compliance review and exemption requests
July 29, 1982	Letter to NRC	Results of Appendix R compliance review - clarifying information
September 3, 1982	Meeting Summary	"Summary of Meeting with Arkansas Power and Light company (AP&L) on August 31, 1982, Concerning the Alternate Safe Shutdown Capability in the Event of a Fire at Arkansas Nuclear One Units Nos. 1 & 2 (ANO-1 & 2)" Requests for additional information (RAI) were attached
September 3, 1982	Letter to ANO - RAI	RAI concerning alternate shutdown capability resulting from NRC review of ANO's July 1, 1982, and discussions at the August 31, 1982 meeting.
October 5, 1982	Letter to NRC	Response to RAI dated September 3, 1982 resulting from NRC review of July 1982 Appendix R compliance submittal
November 11, 1982	Letter to NRC	Response to RAI of September 3, 1982 and meeting of October 6, 1982, and clarifying information concerning exemption requests.
March 22, 1983	Letter to ANO - Exemptions SER	Exemptions from Appendix R and safety evaluation report (SER) included in the Exemption by reference
May 13, 1983	Letter to ANO - SER	SER regarding ANO's safe shutdown capability evaluated against Appendix R, III.G.3 and III.L
August 15, 1984	Letter to NRC	Reanalysis of Appendix R Compliance and requests for exemptions from Appendix R, III.G
August 30, 1985	Letter to NRC	Current status of Appendix R modifications and exemption requests
September 3, 1986	Letter to ANO - RAI	RAIs on Appendix R exemption requests
October 20, 1986	Letter to NRC	Response to RAI of September 3, 1986. RAI 280.15 and 208/16 responses failed to identify that make-up pump and emergency feedwater pump cables were located in Fire Zones 98J
April 22, 1987	Letter to NRC	Information on exemption for Fire Zone 38Y only
June 24, 1987	Letter to NRC	Information on exemption for Fire Zones 38Y, 34Y and 20Y
September 13, 1987	Inspection Report	Inspection of ANO's implementation of and compliance to the safe shutdown requirements of Appendix R

October 26, 1988	Letter to ANO - Exemptions SER	Exemptions from Appendix R and SER

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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Parallel Concurrence

Craig G. Anderson, Vice President,
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Original is with Karla

SUBJECT: RESPONSE TO BACKFIT CLAIM REGARDING NRC INSPECTION REPORT 50-313/01-06; 50-368/01-06

Dear Mr. Anderson:

As documented in NRC Inspection Report 50-313;-368/01-06, dated August 20, 2001, the NRC identified an unresolved issue in the Unit 1 emergency diesel generator corridor and the Unit 1 north electrical switchgear room concerning use of manual actions in lieu of providing protection for cables associated with equipment necessary for achieving and maintaining hot shutdown as specified in 10 CFR Part 50, Appendix R, Section III.G.2. This issue was considered unresolved pending further NRC review and the determination of its risk. Subsequently, in an exit meeting held on August 30, 2001, the NRC informed Entergy Operations, Inc., that the existing configurations did not conform to the requirements of 10 CFR Part 50, Appendix R, Section III.G.2. However, the issue remained unresolved pending the completion of the NRC's risk determination.

Your letter of September 28, 2001, claimed that our position that manual actions cannot be used to comply with 10 CFR Part 50, Appendix R, Section III.G.2, was a backfit. At issue is your use of manual actions for achieving and maintaining hot shutdown conditions in the event of a fire in the Unit 1 emergency diesel generator corridor (Fire Zone 98J) and north switchgear room (Fire Zone 99M). In this letter, you asserted that the NRC has accepted such manual actions in the past, and stated that our position with respect to disallowing the use of manual actions for complying with Section III.G.2 of Appendix R should be considered a backfit that is generic to all plants.

On October 26, 2001, and again on January 17, 2002, we convened a backfit panel in accordance with NRC Management Directive 8.4, "NRC Program for Management of Plant-Specific Backfitting of Nuclear Power Plants," to review your backfit claim as stated in your letter of September 28, 2001. After careful consideration of your appeal, we have determined that (1) the NRC did not impose a regulatory staff position that is new or different from a previously applicable staff position relative to the requirements of 10 CFR Part 50, Appendix R, Section III.G.2; (2) the NRC did not approve the use of manual actions for complying with 10 CFR Part 50, Appendix R, Section III.G.2, in the Unit 1 diesel generator corridor and north electrical switchgear room in lieu of meeting the requirements of 10 CFR Part 50, Appendix R, Section III.G.2.a, III.G.2.b, or III.G.2.c; and (3) your methodology for using manual actions (in the event of a fire in the Unit 1 diesel generator corridor and north switchgear room), in lieu of

ensuring that one train of redundant cables and equipment of systems needed for achieving and maintaining hot shutdown conditions was free of fire damage, does not comply with the requirements of 10 CFR Part 50, Appendix R, Section III.G.2. Accordingly, Unresolved Item 50-313;368/0106-02 has been reclassified as an Apparent Violation pending NRC's assessment of the risk significance associated with this finding. When complete, the results of the risk determination will be forwarded to you by separate correspondence. The basis for this conclusion is enclosed.

If you disagree with this evaluation of your backfit claim, you may submit a written appeal to the Director, Office of Nuclear Reactor Regulation in accordance with NRC Management Directive 8.4, " NRC Program for Management of Plant-Specific Backfitting of Nuclear Power Plants."

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/ADAMS.html (the Public Electronic Reading Room).

Sincerely,

Ellis W. Merschoff
Regional Administrator

Enclosure: As stated

Dockets: 50-313; 50-368
Licenses: DPR-51; NPF-6

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concurred concurred concurred concurred

DOCUMENT: R:_ano\2001\an0106backfit-rln.wpd

RIV:DRS/PSB	C:EMB	D:DRS	C:DRP/D	D:DRP	D:DNMS
RLNease/lmb	CSMarschall	ATHowell III	LJSmith	KEBrockman	DDChamberlain

RC	D:ACES	OGC	NRR/DLPM	DRA	RA
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ENCLOSURE

In a letter dated September 28, 2001, Entergy Operations, Inc. (Entergy), claimed that Region IV's position that manual actions cannot be used to comply with 10 CFR Part 50, Appendix R, Section III.G.2. was a backfit, generic to all plants. Backfitting is defined in 10 CFR 50.109 "as the modification of or addition to systems, structures, components, or design of a facility; or the design approval or manufacturing license for a facility; or the procedures or organization required to design, construct or operate a facility; any of which may result from a new or amended provision in the Commission rules or the imposition of a regulatory staff position interpreting the Commission rules that is either new or different from a previously applicable staff position..."

On October 26, 2001, the NRC convened a backfit panel to review Entergy's backfit claim as presented in their letter of September 28, 2001, and accompanying attachments. As a result of that meeting, the panel requested an evaluation of the following four key points presented in Entergy's backfit claim.

I. NRC's Past and Present Positions Regarding the Use of Manual Actions for Meeting the Requirements of 10 CFR Part 50, Appendix R, Section III.G

In their letter dated September 28, 2001, Entergy stated that the NRC had accepted on many occasions, including at Arkansas Nuclear One (ANO), the use of manual actions for complying with 10 CFR Part 50, Appendix R, Section III.G.2. Entergy stated that NRC generic Appendix R guidance documents, the NRC's Triennial Fire Protection Inspection Procedure 71111.05, and recent NRC fire protection reports all supported this position.

Entergy claimed that certain statements in NRC fire protection inspection reports and inspection procedures provide an NRC position that permits the use of manual actions for achieving post-fire safe shutdown. With respect to NRC inspection reports, the statements quoted by Entergy were taken from the description of the scope of the inspection, not from the inspection findings section of the reports. The triennial fire protection inspection scope consists of a review of the licensee's methodology for reaching safe shutdown, including any manual actions that are credited in that methodology. These scope statements are not an endorsement for the use of manual actions for meeting Section III.G.2 of Appendix R, merely statements describing what the inspectors reviewed. As described in NUREG 1409[1], NRC inspection procedures are not approved NRC positions. [redacted]

S

[1] Section 3.3 of NUREG 1409, "Backfitting Guidelines," states, "No, inspection procedures are not approved staff positions, which is the reason they are not reviewed by CRGR." NUREG 1409 further states, "Licensees cannot be required to implement positions discussed in an inspection procedure or manual unless the same positions exist in the form of an approved regulatory staff position. Examples of approved staff positions are described in Manual Chapter 0514 and include the SRP [Standard Review Plan], branch technical positions, regulatory guides, generic letters, and bulletins."

ENCLOSURE

[redacted]

In 1981, the NRC issued 10 CFR 50.48, "Fire protection," and Appendix R to 10 CFR Part 50, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979." ANO, Unit 1 was licensed in 1974, and Unit 2 was licensed in 1978; therefore, for both units, the licensee was required to meet the provisions of 10 CFR Part 50, Appendix R, Sections III.G, III.J, and III.O.

10 CFR Part 50, Appendix R, Section III.G, "Fire Protection of Safe Shutdown Capability," provides the requirements for ensuring that at least one train of equipment needed for safe shutdown is free of fire damage. As discussed in the Statements of Consideration for 10 CFR 50.48 and 10 CFR Part 50, Appendix R, it is not possible to predict the conditions under which fires may occur and propagate; therefore, the Commission established three specific methods for protecting safe shutdown equipment so that at least one train remains free of fire damage. These three methods are specified in Section III.G.2 of Appendix R. The first method is separation of redundant safe shutdown trains and associated circuits by 3-hour fire rated barriers. The second method is a combination of separation of redundant safe shutdown trains and associated circuits by 20 feet or more of space with no intervening combustibles or fire hazards, plus area-wide automatic fire suppression and detection. The third method is a combination of separation of redundant safe shutdown trains and associated circuits by a 1-hour fire-rated barrier plus automatic fire suppression and detection capability. If these conditions cannot be met, an exemption from Section III.G.2, or an alternative or dedicated safe shutdown capability specified in 10 CFR Part 50, Appendix R, Section III.G.3, is required. Specifics for alternative or dedicated shutdown are provided in 10 CFR Part 50, Appendix R, Section III.L [redacted]

The requirements for ensuring that at least one train of equipment needed for safe shutdown is free of fire damage is described and discussed in numerous generic NRC documents such as:

- Statements of Consideration for 10 CFR 50.48 and 10 CFR Part 50, Appendix R
- Generic Letter 81-12, "Fire Protection Rule (45 FR 76602, November 19, 1980)"
- Clarification of Generic Letter 81-12
- Information Notice 84-09, "Lessons Learned from NRC Inspections of Fire Protection Safe Shutdown Systems (10 CFR 50, Appendix R)"
- NUREG 0800, Standard Review Plan 9.5.1, "Fire Protection Program"

In addition, in ANO-specific licensing basis documents, such as safety evaluation reports and exemptions, the NRC staff described the same specific requirements for ensuring one train of safe shutdown equipment is free of fire damage. In these documents, the NRC restated the requirements of Appendix R, Section III.G, and discussed the three methods for ensuring that one train of equipment and cables for

systems necessary for achieving and maintaining hot shutdown conditions was free of fire damage, as required by Section III.G.2. The NRC further explained that if these methods could not be met, then an alternative fire protection configuration must be provided in accordance with Section III.G.3 of Appendix R.

Conclusion: [redacted] The regulations, statements of consideration, and generic correspondence, as well as ANO-specific documentation are in agreement concerning the use of manual actions for achieving and maintaining hot shutdown conditions as required in Section III.G of Appendix R to 10 CFR Part 50. As these documents show, the NRC has not in the past and does not currently consider manual actions to be acceptable for complying with 10 CFR Part 50, Appendix R, Section III.G.2, unless specifically reviewed and approved. The panel concludes that the position to disallow the use of manual actions for meeting 10 CFR Part 50, Appendix R, Section III.G.2 is not an imposition of a regulatory staff position interpreting the Commission rules that are either new or different from a previously applicable staff position. Therefore, this position is not a backfit specific to ANO. [2]

II. ANO's Position Regarding 10 CFR Part 50, Appendix R, Section III.G

In a letter dated September 28, 2001, Entergy summarized their positions concerning the use of manual actions as:

"1. The use of manual actions to operate components ....outside the fire area is permitted by 10CFR50 Appendix R, Section III.G.1 and does not violate Section III.G.2;

"2. Compliance with 10CFR50 Appendix R, Section III.G.2 does not require protective features on circuits that are not required to function and, therefore, are not necessary systems required to achieve safe shutdown, and regardless of fire damage cannot prevent the ability to achieve safe shutdown conditions. "

Section III.G.1 of Appendix R to 10 CFR Part 50 provides the overall fire protection objective to protect equipment so that in the event of a fire in any fire area, (a) one train of systems necessary for reaching hot shutdown conditions (from either the control room or emergency control stations) is free of fire damage; and (b) systems necessary for reaching cold shutdown conditions (from either the control room or emergency control stations) can be repaired within 72 hours. Section III.G.1.a. can be met by ensuring one train of safe shutdown systems is free from fire damage as specified in Section III.G.2 of Appendix R, or by using an alternative safe shutdown capability

[2] Entergy's claim that this position is a backfit generic to all plants will be addressed by the NRC's Office of Nuclear Reactor Regulation, in response to a letter from the Nuclear Energy Institute dated January 11, 2002.

specified in Section III.G.3. While Section III.G.1.a. contemplates the use of manual actions, these are provided in the context of alternative or dedicated shutdown under Section III.G.3.

Section III.G.2 of Appendix R provides three acceptable methods for ensuring cables and equipment associated with one train of systems necessary for achieving and maintaining hot shutdown conditions is free of fire damage. None of the three methods in Section III.G.2 describes the use of manual actions to mitigate the effects of a fire on safe shutdown equipment and cables. Rather, these methods have the objective of preventing fire damage through the use of specific protection features. Section III.G.2 also requires these same fire protection features for circuits whose damage (by fire) could adversely affect the accomplishment of safe shutdown functions. Contrary to Entergy's position (2) above, cables associated with systems necessary for safe shutdown are required to be free of fire damage, whether the cables themselves are considered "necessary" or not. In addition, certain circuits which may not be required to function, but whose maloperation could adversely affect safe shutdown, must also be free of fire damage.

If a licensee cannot meet the requirements of Section III.G.2 of Appendix R for certain fire areas, then an alternative or dedicated shutdown capability is required as outlined in Section III.G.3. Under Section III.G.3, manual actions may be taken. The goals and requirements associated with alternative and dedicated shutdown capability under Section III.G.3 are specified in Section III.L of Appendix R, and include a requirement that alternative shutdown capability be implemented by procedures. Another option would be to request an exemption from those portions of Section III.G.2 that cannot be met.

Conclusion: For the ANO plant, Entergy must meet the requirements of 10 CFR Part 50, Section III.G.1. In addition, at the ANO plant, Entergy must meet either Section III.G.2 or Section III.G.3 for the protection of cables and equipment associated with systems necessary for achieving and maintaining hot shutdown conditions, or request an exemption. Section III.G.2 provides three specific methods for preventing fire damage to equipment and cables associated with systems necessary for achieving and maintaining hot shutdown, and to circuits whose maloperation could adversely affect the licensee's ability to achieve hot shutdown. Section III.G.3 provides the option of using alternative or dedicated shutdown capability for those fire areas in which the licensee cannot meet the requirements of Section III.G.2. Therefore, the use of manual actions for meeting the requirements of Section III.G.2 is not permitted, unless these actions were specifically reviewed and approved by the NRC and documented in a safety evaluation report.

ENCLOSURE

III. NRC Review and Approval of Manual Actions for Meeting the Requirements of 10 CFR Part 50, Appendix R, Section III.G in 14 Fire Zones at ANO

In their letter of September 28, 2001, Entergy stated that the use of manual actions to achieve safe shutdown conditions in the event of a fire has been a standard practice at ANO since the inception of Appendix R, and cite[redacted]

- A summary of a meeting between NRC and ANO documented by the NRC in a letter dated September 3, 1982, which included a request for additional information (RAI). [redacted]

- ANO's response to the RAI dated October 5, 1982, provided additional information concerning the 14 fire zones, in which manual actions were credited.

[redacted] During a meeting on August 31, 1982, the NRC specifically requested additional information concerning the use of manual actions in alternate shutdown areas, which is documented in a meeting summary dated September 3, 1982. The subject line of the meeting summary reads, "Summary of Meeting with Arkansas Power and Light Company (Ap&l) on August 31, 1982, Concerning the Alternate Safe Shutdown Capability in the Event of a Fire at Arkansas Nuclear One Units Nos. 1 & 2 (ANO-1 & 2)." Clearly, the meeting was held and the summary (including the attached RAI) written in the context of alternative shutdown, which is governed by 10 CFR Part 50, Appendix R, Section III.G.3 and Section III.L (specific requirements for alternative or dedicated shutdown are provided in Section III.L). The NRC subsequently issued an safety evaluation report (SER) dated May 13, 1983, which provided the staff's review of the licensee's methodology for meeting Sections III.G.3 and III.L. In this SER, the staff referenced the meeting of August 31, 1982, and the licensee's October 5, 1982, letter. It is clear that in their SER of May 13, 1983, the NRC reviewed manual actions credited in the 14 fire zones in the context of Sections III.G.3 and III.L, stating, "All other areas of the plant not required to have alternate safe shutdown will comply with the requirements of Section III.G.2 of Appendix R, unless an exemption request has been approved by the staff." The licensee did not identify Fire Zones 98J and 99M in the list of fourteen fire zones requiring manual action, and did not request an exemption from Section III.G.2.

Conclusion: The NRC reviewed the use of manual actions identified by the licensee in 14 fire zones for the purposes of alternative shutdown (10 CFR Part 50, Appendix R, Section III.G.3). Manual actions for addressing fires in Fire Zones 98J and 99M were not included in these 14. For all other areas the NRC expected the licensee to either comply with Section III.G.2 or request an exemption. The licensee did not a request an

exemption from Section III.G.2 for the use of manual actions in Fire Zones 98J and 99M. Therefore, for Fire Zones 98J and 99M, the use of manual actions for achieving and maintaining hot shutdown conditions was not reviewed and approved by the NRC.

IV. NRC's Tacit Approval of the Licensee's Methodology for Complying with 10 CFR Part 50, Appendix R, Section III.G

In their letter of September 28, 2001, Entergy stated that in 1982, they submitted to the NRC a description of their methodology for complying with Appendix R, which included a statement that under certain conditions credit for manual operation of equipment was taken. Entergy also stated that because this statement was not challenged in subsequent NRC correspondence or safety evaluation reports, this silence constituted tacit approval of the use of manual actions, thus, making it part of the ANO licensing basis.

The NRC was not silent regarding the use of manual actions. In an August 31, 1982, meeting between NRC and Arkansas Power and Light Company, as documented by the NRC in a letter dated September 3, 1982, the NRC requested additional information for fire zones that required some sort of manual action or non-routine operation. Fire Zones 98J and 99M were not identified by the licensee as requiring manual actions. By this licensee omission, the NRC staff would have concluded that no manual actions would be credited for mitigating fires in Fire Zones 98J and 99M.

In submitting the results of their Appendix R compliance review in a letter dated July 1, 1982, the licensee stated, that in certain cases, credit for manual operation of equipment was taken if controls (and power for valves) could be damaged by a fire. Such credit was taken only if:

"a. the component to be operated is not located in the affected fire zone, although the cable may be damaged by fire;

"b. sufficient time is available to perform the required manual actions; and

"c. personnel are available, beyond the fire brigade and minimum operations shift crew limitations, to perform the manual actions."

The approach taken by the licensee, as described in the fire pre-plans for Fire Zones 98J and 99M, was to provide a list of components and safe shutdown functions that could fail as a result of fire, and to describe actions that could be taken to mitigate those failures as they occur. The number of manual actions that may be required to restore safe shutdown functions in the event of a fire in Fire Zones 98J and 99M was extensive. However, contrary to the above conditions, the licensee did not perform an analysis that demonstrated sufficient time was available and sufficient trained personnel were available to take all the actions required to mitigate all the failures, which could occur as a result of fires in Fire Zones 98J and 99M. [redacted]

5

[redacted] the licensee did not demonstrate that they met the conditions under which they stated manual actions would be credited.

Conclusion: Even if, as Entergy claims, the NRC tacitly approved the use of manual actions for meeting Section III.G.2 of Appendix R (which it did not), this approval would have been dependent on the licensee doing so under the conditions described in their Appendix R compliance methodology. However, for Fire Zones 98J and 99M, the licensee did not meet their own conditions set forth for the use of manual actions.

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[3] Section 3.3 of NUREG 1409, "Backfitting Guidelines," states, "Cases where an inspector provides tacit approval are relatively rare. Simply not challenging a licensee's practice would not be considered tacit approval. The only example provided in Manual Chapter 0514 is a case where the NRC has indicated tacit approval by not acting in a reasonable time on a licensee submittal and the licensee has moved ahead to implement the proposal described in the submittal."

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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ARLINGTON, TEXAS 76011-8064

Compliance file

Craig G. Anderson, Vice President,
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Arkansas Nuclear One
Entergy Operations, Inc.
1448 S.R. 333
Russellville, Arkansas 72801-0967

SUBJECT: RESPONSE TO BACKFIT CLAIM REGARDING NRC INSPECTION REPORT 50-313/01-06; 50-368/01-06

Dear Mr. Anderson:

As documented in NRC Inspection Report 50-313;-368/01-06, dated August 20, 2001, the NRC identified an unresolved issue in the Unit 1 emergency diesel generator corridor and the Unit 1 north electrical switchgear room concerning use of manual actions in lieu of providing protection for cables associated with equipment necessary for achieving and maintaining hot shutdown as specified in 10 CFR Part 50, Appendix R, Section III.G.2. This issue was considered unresolved pending further NRC review and the determination of its risk. Subsequently, in an exit meeting held on August 30, 2001, the NRC informed Entergy Operations, Inc., that the existing configurations did not conform to the requirements of 10 CFR Part 50, Appendix R, Section III.G.2. However, the issue remained unresolved pending the completion of the NRC's risk determination.

Your letter of September 28, 2001, claimed that our position that manual actions cannot be used to comply with 10 CFR Part 50, Appendix R, Section III.G.2, was a backfit. At issue is your use of manual actions for achieving and maintaining hot shutdown conditions in the event of a fire in the Unit 1 emergency diesel generator corridor (Fire Zone 98J) and north switchgear room (Fire Zone 99M). In this letter, you asserted that the NRC has accepted such manual actions in the past, and stated that our position with respect to disallowing the use of manual actions for complying with Section III.G.2 of Appendix R should be considered a backfit that is generic to all plants.

On October 26, 2001, and again on January 17, 2002, we convened a backfit panel in accordance with NRC Management Directive 8.4, "NRC Program for Management of Plant-Specific Backfitting of Nuclear Power Plants," to review your backfit claim as stated in your letter of September 28, 2001. After careful consideration of your appeal, we have determined that (1) the NRC did not impose a regulatory staff position that is new or different from a previously applicable staff position relative to the requirements of 10 CFR Part 50, Appendix R, Section III.G.2; (2) the NRC did not approve the use of manual actions for complying with 10 CFR Part 50, Appendix R, Section III.G.2, in the Unit 1 diesel generator corridor and north electrical switchgear room in lieu of meeting the requirements of 10 CFR Part 50, Appendix R, Section III.G.2.a, III.G.2.b, or III.G.2.c; and (3) your methodology for using manual actions (in the event of a fire in the Unit 1 diesel generator corridor and north switchgear room), in lieu of

ensuring that one train of redundant cables and equipment of systems needed for achieving and maintaining hot shutdown conditions was free of fire damage, does not comply with the requirements of 10 CFR Part 50, Appendix R, Section III.G.2. Your claim that our position (that manual actions cannot be used to comply with 10 CFR Part 50, Appendix R, Section III.G.2) is a generic backfit will be addressed by the NRC's Office of Nuclear Reactor Regulation, in their response to a letter from the Nuclear Energy Institute dated January 11, 2002. Accordingly, Unresolved Item 50-313;368/0106-02 has been reclassified as an Apparent Violation pending NRC's assessment of the risk significance associated with this finding. When complete, the results of the risk determination will be forwarded to you by separate correspondence. The basis for this conclusion is enclosed.

If you disagree with this evaluation of your backfit claim, you may submit a written appeal to the Director, Office of Nuclear Reactor Regulation in accordance with NRC Management Directive 8.4, " NRC Program for Management of Plant-Specific Backfitting of Nuclear Power Plants."

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/ADAMS.html (the Public Electronic Reading Room).

Sincerely,

Ellis W. Merschoff
Regional Administrator

Enclosure: As stated

Dockets: 50-313; 50-368
Licenses: DPR-51; NPF-6

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RIV:DRS/PSB	C:EMB	D:DRS	C:DRP/D	D:DRP	D:DNMS
RLNease/lmb	CSMarschall	ATHowell III	LJSmith	KEBrockman	DDChamberlain

RC	D:ACES	OGC	NRR/DLPM	DRA	RA
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ENCLOSURE

In a letter dated September 28, 2001, Entergy Operations, Inc. (Entergy), claimed that Region IV's position that manual actions cannot be used to comply with 10 CFR Part 50, Appendix R, Section III.G.2. was a backfit, generic to all plants[1]. Backfitting is defined in 10 CFR 50.109 "as the modification of or addition to systems, structures, components, or design of a facility; or the design approval or manufacturing license for a facility; or the procedures or organization required to design, construct or operate a facility; any of which may result from a new or amended provision in the Commission rules or the imposition of a regulatory staff position interpreting the Commission rules that is either new or different from a previously applicable staff position..."

On October 26, 2001, the NRC convened a backfit panel to review Entergy's backfit claim as presented in their letter of September 28, 2001, and accompanying attachments. As a result of that meeting, the panel requested an evaluation of the following four key points presented in Entergy's backfit claim.

I. NRC's Past and Present Positions Regarding the Use of Manual Actions for Meeting the Requirements of 10 CFR Part 50, Appendix R, Section III.G

In their letter dated September 28, 2001, Entergy stated that the NRC had accepted on many occasions, including at Arkansas Nuclear One (ANO), the use of manual actions for complying with 10 CFR Part 50, Appendix R, Section III.G.2. Entergy stated that NRC generic Appendix R guidance documents, the NRC's Triennial Fire Protection Inspection Procedure 71111.05, and recent NRC fire protection reports all supported this position.

Entergy claimed that certain statements in NRC fire protection inspection reports and inspection procedures provide an NRC position that permits the use of manual actions for achieving post-fire safe shutdown. With respect to NRC inspection reports, the statements quoted by Entergy were taken from the description of the scope of the inspection, not from the inspection findings section of the reports. The triennial fire protection inspection scope consists of a review of the licensee's methodology for reaching safe shutdown, including any manual actions that are credited in that methodology. These scope statements are not an endorsement for the use of manual actions for meeting Section III.G.2 of Appendix R, merely statements describing what the inspectors reviewed. As described in NUREG 1409[2], NRC inspection procedures

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[1] Entergy's claim that this position is a backfit generic to all plants will be addressed by the NRC's Office of Nuclear Reactor Regulation, in their response to a letter from the Nuclear Energy Institute dated January 11, 2002.

[2] In response to a question regarding whether NRC Inspection Manual guidance is considered an approved position, Section 3.3 of NUREG 1409, "Backfitting Guidelines," states, "No, inspection procedures are not approved staff positions, which is the reason they are not reviewed by CRGR." NUREG 1409 further states, "Licensees cannot be required to implement positions discussed in an inspection procedure or manual unless the same positions exist in the form of an approved regulatory staff position. Examples of approved staff positions are

are not approved NRC positions. [redacted]

In 1981, the NRC issued 10 CFR 50.48, "Fire protection," and Appendix R to 10 CFR Part 50, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979." ANO, Unit 1 was licensed in 1974, and Unit 2 was licensed in 1978; therefore, for both units, the licensee was required to meet the provisions of 10 CFR Part 50, Appendix R, Sections III.G, III.J, and III.O.

10 CFR Part 50, Appendix R, Section III.G, "Fire Protection of Safe Shutdown Capability," provides the requirements for ensuring that at least one train of equipment needed for safe shutdown is free of fire damage. As discussed in the Statements of Consideration for 10 CFR 50.48 and 10 CFR Part 50, Appendix R, it is not possible to predict the conditions under which fires may occur and propagate; therefore, the Commission established three specific methods for protecting safe shutdown equipment so that at least one train remains free of fire damage. These three methods are specified in Section III.G.2 of Appendix R. The first method is separation of redundant safe shutdown trains and associated circuits by 3-hour fire rated barriers. The second method is a combination of separation of redundant safe shutdown trains and associated circuits by 20 feet or more of space with no intervening combustibles or fire hazards, plus area-wide automatic fire suppression and detection. The third method is a combination of separation of redundant safe shutdown trains and associated circuits by a 1-hour fire-rated barrier plus automatic fire suppression and detection capability. If these conditions cannot be met, an exemption from Section III.G.2, or an alternative or dedicated safe shutdown capability specified in 10 CFR Part 50, Appendix R, Section III.G.3, is required. ~~Specifics~~Specific requirements for alternative or dedicated shutdown are provided in 10 CFR Part 50, Appendix R, Section III.L [redacted]

The requirements for ensuring that at least one train of equipment needed for safe shutdown is free of fire damage is described and discussed in numerous generic NRC documents such as:

- Statements of Consideration for 10 CFR 50.48 and 10 CFR Part 50, Appendix R
- Generic Letter 81-12, "Fire Protection Rule (45 FR 76602, November 19, 1980)"
- Clarification of Generic Letter 81-12
- Information Notice 84-09, "Lessons Learned from NRC Inspections of Fire Protection Safe Shutdown Systems (10 CFR 50, Appendix R)"
- NUREG 0800, Standard Review Plan 9.5.1, "Fire Protection Program"

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described in Manual Chapter 0514 and include the SRP [Standard Review Plan], branch technical positions, regulatory guides, generic letters, and bulletins."

In addition, in ANO-specific licensing basis documents, such as safety evaluation reports and exemptions, the NRC staff described the same specific requirements for ensuring one train of safe shutdown equipment is free of fire damage. In these documents, the NRC restated the requirements of 10 CFR Part 50, Appendix R, Section III.G, and discussed the three methods for ensuring that one train of equipment and cables for systems necessary for achieving and maintaining hot shutdown conditions was free of fire damage, as required by Section III.G.2. The NRC further explained that if these methods could not be met, then an alternative fire protection configuration must be provided in accordance with Section III.G.3 ~~of Appendix R~~(alternative or dedicated shutdown), of Appendix R. Specific requirements for meeting Section III.G.3 (alternative or dedicated shutdown) are provided in 10 CFR Part 50, Appendix R, Section III.L.

Conclusion: [redacted] The regulations, statements of consideration, and generic correspondence, as well as ANO-specific documentation, are in agreement concerning the use of manual actions for achieving and maintaining hot shutdown conditions as required in Section III.G of Appendix R to 10 CFR Part 50. As these documents show, the NRC has not in the past and does not currently consider manual actions to be acceptable for complying with 10 CFR Part 50, Appendix R, Section III.G.2, unless specifically reviewed and approved. The panel concludes that the position to disallow the use of manual actions for meeting 10 CFR Part 50, Appendix- R, Section III.G.2 is not an imposition of a regulatory staff position interpreting the Commission rules that ~~are~~is either new or different from a previously applicable staff position. Therefore, this position is not a backfit specific to ANO.[2] Entergy's claim that NRC inspection report statements constitute a basis for their backfit claim is addressed in Sections III and IV of this enclosure.

II. ANO's Position Regarding 10 CFR Part 50, Appendix R, Section III.G

In a letter dated September 28, 2001, Entergy summarized their positions concerning the use of manual actions as:

"1. *The use of manual actions to operate necessary components ....outside the identified fire area is permitted by 10CFR50 Appendix R, Section III.G.1 and does not violate 10 CFR.50, Section III.G.2;*

"2. *Compliance with 10CFR50 Appendix R, Section III.G.2 does not require protective features on circuits that are not required to function and, therefore, are not necessary systems required to achieve safe shutdown~~,~~ conditions and, regardless of fire damage cannot prevent the ability to achieve safe shutdown conditions.* "

Section III.G.1 of Appendix R to 10 CFR Part 50 provides the overall fire protection objective to protect equipment so that in the event of a fire in any fire area, (a) one train

of systems necessary for reaching hot shutdown conditions (from either the control room or emergency control stations) is free of fire damage; and (b) systems necessary for reaching cold shutdown conditions (from either the control room or emergency control stations) can be repaired within 72 hours. Section III.G.1.a. can be met by ensuring one train of safe shutdown systems is free from fire damage as specified in Section III.G.2 of Appendix R, or by using an alternative safe shutdown capability specified in Section III.G.3. While Section III.G.1.a. contemplates the use of manual actions, these are provided in the context of alternative or dedicated shutdown under Section III.G.3.

Section III.G.2 of Appendix R to 10 CFR Part 50 provides three acceptable methods for ensuring cables and equipment associated with one train of systems necessary for achieving and maintaining hot shutdown conditions is free of fire damage. None of the three methods in Section III.G.2 describes the use of manual actions to mitigate the effects of a fire on safe shutdown equipment and cables. Rather, these methods have the objective of preventing fire damage through the use of specific protection features. Section III.G.2 also requires these same fire protection features for circuits whose damage (by fire) could adversely affect the accomplishment of safe shutdown functions. Contrary to Entergy's position (2) above, cables associated with systems necessary for safe shutdown are required to be free of fire damage, whether the cables themselves are considered "necessary" or not. In addition, certain circuits ~~who in themselves~~ which may not be required to function, but whose maloperation could adversely affect safe shutdown, must also be free of fire damage.

If a licensee cannot meet the requirements of ~~Section III.G.2 of~~ 10 CFR Part 50, Appendix R, Section III.G.2 for certain fire areas, then an alternative or dedicated shutdown capability is required as outlined in Section III.G.3. Under Section III.G.3, manual actions may be taken. The goals and requirements associated with alternative and dedicated shutdown capability under Section III.G.3 are specified in Section III.L of Appendix R, and include a requirement that alternative shutdown capability be implemented by procedures. Another option would be to request an exemption from those portions of Section III.G.2 that cannot be met.

Conclusion: For the ANO plant, Entergy must meet the requirements of 10 CFR Part 50, Section III.G.1. In addition, at the ANO plant, Entergy must meet either Section III.G.2 or Section III.G.3 for the protection of cables and equipment associated with systems necessary for achieving and maintaining hot shutdown conditions, or request an exemption. Section III.G.2 provides three specific methods for preventing fire damage to equipment and cables associated with systems necessary for achieving and maintaining hot shutdown, and to circuits whose maloperation could adversely affect the licensee's ability to achieve hot shutdown. Section III.G.3 provides the option of using alternative or dedicated shutdown capability for those fire areas in which the licensee cannot meet the requirements of Section III.G.2. Therefore, the use of manual actions for meeting the requirements of Section III.G.2 is not permitted, unless these

actions were specifically reviewed and approved by the NRC and documented in a safety evaluation report.

III. NRC Review and Approval of Manual Actions for Meeting the Requirements of 10 CFR Part 50, Appendix R, Section III.G in 14 Fire Zones at ANO

In their letter of September 28, 2001, Entergy stated that the use of manual actions to achieve safe shutdown conditions in the event of a fire has been a standard practice at ANO since the inception of Appendix R, and cited [redacted]

- ~~A summary of a~~an August 31, 1982, meeting between NRC and ~~ANO~~ Arkansas Power and Light (documented by the NRC in a ~~letter~~meeting summary dated September 3, 1982~~, which included a~~) and Arkansas Power and Light's response to an NRC request for additional information (RAI) [redacted]

- ~~ANO's response to the RAI~~, dated October 5, 1982~~, provided additional information concerning the 14 fire zones, in which~~.

[redacted] or safe shutdown under 10 CFR Part 50, Appendix R, Section III.G.2. However, upon review of the statements in context, we believe that the better view is that these statements should be interpreted as constituting NRC's approval of the use of manual actions for alternative shutdow[redacted]During a meeting on August 31, 1982, the NRC specifically requested additional information concerning the use of manual actions in alternate shutdown areas, which is documented in a meeting summary dated September 3, 1982. The subject line of the meeting summary reads, "Summary of Meeting with Arkansas Power and Light Company (~~Ap&l~~AP&L) on August 31, 1982, Concerning the Alternate Safe Shutdown Capability in the Event of a Fire at Arkansas Nuclear One Units Nos. 1 & 2 (ANO-1 & 2)." Clearly, the meeting was held and the summary (including the attached RAI) was written in the context of alternative shutdown, which is governed by 10 CFR Part 50, Appendix R, Section III.G.3 and Section III.L (specific requirements for ~~alternative or dedicated~~meeting Section III.G.3 shutdown are provided in Section III.L). The NRC subsequently issued an safety evaluation report (SER) dated May 13, 1983, which provided the staff's review of the licensee's methodology for meeting Sections III.G.3 and III.L. In this SER, the staff referenced the meeting of August 31, 1982, and the licensee's response of October 5, 1982~~, letter~~. It is clear that in their SER of May 13, 1983, the NRC reviewed manual actions credited in the 14 fire zones in the

context of Sections III.G.3 and III.L, stating, "All other areas of the plant not required to have alternate safe shutdown will comply with the requirements of Section III.G.2 of Appendix R, unless an exemption request has been approved by the staff." The licensee did not identify Fire Zones 98J and 99M in the list of fourteen fire zones requiring manual action, and did not request an exemption from Section III.G.2.

Conclusion: The NRC reviewed the use of manual actions identified by the licensee in 14 fire zones for the purposes of alternative shutdown (10 CFR Part 50, Appendix R, Section III.G.3). Manual actions for addressing fires in Fire Zones 98J and 99M were not included in these 14. For all other areas the NRC expected the licensee to either comply with Section III.G.2 or request an exemption. The licensee did not a request an exemption from Section III.G.2 for the use of manual actions in Fire Zones 98J and 99M. Therefore, for Fire Zones 98J and 99M, the use of manual actions for achieving and maintaining hot shutdown conditions was not reviewed and approved by the NRC.

IV. NRC's Alleged Tacit Approval of the Licensee's Methodology for Complying with 10 CFR Part 50, Appendix R, Section III.G

In their letter of September 28, 2001, Entergy stated that in 1982, they submitted to the NRC a description of their methodology for complying with Appendix R, which included a statement that under certain conditions credit for manual operation of equipment was taken. Entergy also stated that because this statement was not challenged in subsequent NRC correspondence or safety evaluation reports, this silence constituted tacit approval of the use of manual actions, thus, making it part of the ANO licensing basis.

~~The~~ As discussed in NUREG 1409[3], simply not challenging a licensee's practice in inspection reports would not be considered tacit approval. Furthermore, contrary to Entergy's claim, the NRC was not silent regarding the use of manual actions. In an August 31, 1982, meeting between NRC and Arkansas Power and Light Company, as documented by the NRC in a letter dated September 3, 1982, the NRC requested additional information for fire zones that required some sort of manual action or non-routine operation. Fire Zones 98J and 99M were not identified by the licensee as requiring manual actions. By this licensee omission, the NRC staff would have concluded that no manual actions would be credited for mitigating fires in Fire Zones 98J and 99M.

In submitting the results of their Appendix R compliance review in a letter dated July 1, 1982, the licensee stated, that in certain cases, credit for manual operation of

[3] Section 3.3 of NUREG 1409, "Backfitting Guidelines," states, "Cases where an inspector provides tacit approval are relatively rare. Simply not challenging a licensee's practice would not be considered tacit approval."

equipment was taken if controls (and power for valves) could be damaged by a fire. Such credit was taken only if:

"a. *the component to be operated is not located in the affected fire zone, although the cable may be damaged by fire;*

"b. *sufficient time is available to perform the required manual actions; and*

"c. *personnel are available, beyond the fire brigade and minimum operations shift crew limitations, to perform the manual actions."*

[redacted] ~~However,~~ cContrary to the above conditions, the licensee did not perform an analysis that demonstrated sufficient time was available and sufficient trained personnel were available to take all the actions required to mitigate all the failures, which could occur as a result of fires in Fire Zones 98J and 99M [redacted]s discussed in Section III of this enclosure, manual actions were reviewed and approved for use in alternative shutdown areas (10 CFR Part 50, Appendix R, Section III.G.3). Even if the NRC's approval of manual actions could be construed as acceptable for meeting the requirements of 10 CFR Part 50, Appendix R, Section III.G.2 (which, as discussed in Section III, there was no such approval), the licensee did not comply with their own criteria for the use of manual actions [redacted]

Conclusion: Even if, as Entergy claims, the NRC approved (tacitly ~~approved~~or otherwise) the use of manual actions for meeting Section III.G.2 of Appendix R (which it did not), this approval would have been dependent on the licensee doing so under the conditions described in their Appendix R compliance methodology. However, for Fire Zones 98J and 99M, the licensee did not meet their own conditions set forth for the use of manual actions.