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1CAN041401

April 7, 2014

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
11555 Rockville Pike  
Rockville, MD 20852

SUBJECT: Request for Implementation Date Relief in Response to March 12, 2012, Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (BDBEEs) (NRC Order EA-12-049)  
Arkansas Nuclear One – Unit 1  
Docket No. 50-313  
License No. DPR-51

- REFERENCES:
1. NRC Order Number EA-12-049, *Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for BDBEEs*, dated March 12, 2012 (0CNA031206) (ML12056A045)
  2. Entergy letter to NRC, *Overall Integrated Plan (OIP) in Response to March 12, 2012, Commission Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for BDBEEs (Order Number EA-12-049)*, dated February 28, 2013 (0CAN021302) (ML13063A151)
  3. Entergy letter to NRC, *First Six-Month Status Report in Response to March 12, 2012, Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for BDBEEs (Order Number EA-12-049)*, dated August 28, 2013 (0CAN081302) (ML13241A414)

Dear Sir or Madam:

On March 12, 2012, the NRC issued an order (Reference 1) to Entergy Operations, Inc. (Entergy). Reference 1 was immediately effective and directed Entergy to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities in the event of a BDBEE. Reference 1 required submission of an OIP pursuant to Section IV, Condition C which was originally submitted via Reference 2. Reference 3 provided Entergy's OIP updates for Arkansas Nuclear One, Unit 1 (ANO-1) and Unit 2 (ANO-2). Reference 3 identified the completion dates for ANO-1 and ANO-2 as February 2015, and October 2015, respectively.

Section IV of NRC Order EA-12-049 (Reference 1) states that licensees proposing to deviate from requirements contained in NRC Order EA-12-049 may request that the Director, Office of

Nuclear Reactor Regulation (NRR), relax those requirements. In accordance with Section IV of NRC Order EA-12-049, Entergy is requesting that the Director, Office of NRR, relax the requirement for completion of full implementation for ANO-1 as prescribed in Section IV.A.2 of NRC Order EA-12-049 to the startup of ANO-2 from refueling outage 2R24 currently scheduled for October 2015.

This letter contains new regulatory commitments which are identified in Attachment 2. If you have any questions regarding this request, please contact Stephenie Pyle at 479.858.4704.

I declare under penalty of perjury that the foregoing is true and correct; executed on April 7, 2014.

Sincerely,

***Original signed by Jeremy G. Browning***

JGB/nbm

Attachments: 1. Arkansas Nuclear One, Unit 1 (ANO-1) NRC Order  
EA-12-049 Implementation Date Relief  
2. List of Regulatory Commitments

cc: Mr. Marc L. Dapas  
Regional Administrator  
U. S. Nuclear Regulatory Commission, Region IV  
1600 East Lamar Boulevard  
Arlington, TX 76011-4511

NRC Senior Resident Inspector  
Arkansas Nuclear One  
P.O. Box 310  
London, AR 72847

U. S. Nuclear Regulatory Commission  
Attn: Mr. Peter Bamford  
MS O-8B3  
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11555 Rockville Pike  
Rockville, MD 20852

**Attachment 1 to**

**1CAN041401**

**Arkansas Nuclear One, Unit 1 (ANO-1) NRC Order EA-12-049  
Implementation Date Relief**

## **ANO-1 NRC Order EA-12-049 Implementation Date Relief**

### Relaxation Request:

Pursuant to the procedure specified in Section IV of NRC Order EA-12-049, *Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events* (BDBEEs) (Reference 1), Entergy Operations, Inc. (Entergy) hereby submits a request for schedule relaxation from the Order requirements for completion of full implementation for ANO-1 for no later than startup of ANO-2 from refueling outage 2R24 currently scheduled for October 2015.

### Order Requirement from Which Relaxation is Requested:

NRC Order EA-12-049, Section IV.A.2 requires completion of full implementation of the Order requirements either no later than two refueling cycles after submittal of the Overall Integrated Plan (OIP), as required by Condition C.I.a, or December 31, 2016, whichever comes first. In accordance with the requirements of the Order, Entergy submitted an update to the OIP which stated ANO-1 would complete all required modifications by February 2015 (scheduled startup from 1R25 – second refueling cycle for ANO-1 after submittal of the original OIP) (References 2 and 3). NRC Order EA-12-049 requires the development, implementation, and maintenance of guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities in the event of a BDBEE.

As described in the OIP update (Reference 3) ANO-1 plans to utilize ANO-2 charging pumps, powered from a portable diesel generator (PDG), as part of the Phase 2 Diverse and Flexible Coping Strategies (FLEX). In order to complete all modifications for ANO-1, design changes to both of the diverse safety-related switchgear (480-Volt (V) load centers) on ANO-2 are required. Typically, to reduce risk, safety-related switchgear is removed from service on an alternating outage basis. With the ANO-2 outage schedule offset from ANO-1, the modification to the second ANO-2 safety-related switchgear would normally occur during ANO-2 refueling outage 2R24 that is scheduled for completion in October 2015. Based on the ANO-2 refueling schedule, Entergy is requesting relaxation for the final switchgear modification schedule to support ANO-1. The relaxation for ANO-1 would extend the currently required February 2015 date until startup of ANO-2 from refueling outage 2R24 currently scheduled for October 2015.

### Justification for Relaxation Request:

The ANO-1 FLEX strategy relies on re-powering one of the three ANO-2 charging pumps (2P-36A, 2P-36B, or 2P-36C) for borated water makeup to the ANO-1 reactor coolant system to support cooldown and depressurization following an extended loss of alternating current power (ELAP). The ANO-2 electrical modifications that are required to support the ANO-1 FLEX strategy are “direct” connections for a PDG through the ANO-2 2B5 and 2B6 480V load centers (separate safety-related trains).

To provide a primary connection point, modification to the 2B6 load center is planned during the upcoming ANO-2 2R23 refueling outage. The 2B6 load center provides power to the 2P-36B and 2P-36C (swing) charging pumps. The 2B6 load center can also power the 2B5 load center through existing cross-tie breakers. The 2B5 load center provides power to the 2P-36A and 2P-36C (swing) charging pumps. As a result, any of the three ANO-2 charging pumps are capable of being powered via the 2B6 load center to support the ANO-1 FLEX strategy. The same type of modification is planned for ANO-2 load center 2B5 to provide a second connection point allowing powering of equipment from a PDG.

Portions of the ANO-2 load center 2B5 modification are planned to be installed by ANO-1 refueling outage 1R25, including installation of the connection for the FLEX PDG to the cables and routing of the cables in the plant. The remaining work consists of the final connection to the ANO-2 2B5 load center which is planned for ANO-2 refueling outage 2R24. As an interim measure, instructions will be in place by startup from the ANO-1 refueling outage 1R25 for connecting a PDG to the 2B5 load center should the ANO-2 2B6 load center not be capable of being powered for some unforeseen reason during an ELAP (action may not meet the required timeline). The final modification design on the ANO-2 2B5 load center is similar to the one being installed on 2B6 (primary connection point) to minimize possibilities of human performance errors and to support the conservatively established timelines.

The relaxation request is acceptable for the following reasons:

- For the approximate period of eight months between original date and the relaxation date, the ANO-2 switchgear modifications supporting the ANO-1 FLEX strategy will already be in place for 2B6 load center which allows powering any one of the three ANO-2 charging pumps from a PDG. Additionally, the other aspects of compliance with NRC Order EA-12-049 will be complete by 1R25 (e.g., FLEX Support Guidelines, training, equipment staged, and modifications installed). As discussed above, until the redundant 2B5 load center is modified, connection instructions to the 2B5 load center for powering it from a PDG will be available to minimize the risk associated with having only a single “quick” connection point (2B6 load center) available.
- To modify both of the 2B5 and 2B6 load centers in 2R23 would incur risk to both of the safety-related load centers in a single outage. From an integrated risk perspective this is not typically done. While minor maintenance may be performed on both trains of safety-related equipment in a refueling outage, the risk mitigation plan for each outage has a specific train emphasis for major maintenance and modifications. The refueling outage 2R23 for ANO-2 is focused on green train equipment (2B6) maintenance, and the refueling outage 2R24 for ANO-2 is focused on red train equipment (2B5) maintenance. There is currently a planned bus outage scheduled on the 2B5 load center in the 2R24 outage. To reduce outage risk it is prudent to separate these modifications and perform the 2B5 modifications in 2R24.

- Additional risk would be introduced from the extensive schedule changes required to insert the 2B5 modifications into ANO-2 refueling outage 2R23. The insertion of the 2B5 modifications into 2R23 affects the scheduling of red train testing as well as numerous motor operated valve tests. At this stage in the 2R23 scheduling process, this amount of rescheduling flux introduces the risk of improperly mitigating the comprehensive risk of multiple equipment schedule interactions. With a 2B5 bus outage already scheduled in 2R24, it is prudent to avoid this 2R23 schedule flux risk by performing the 2B5 modifications in 2R24.

Conclusion:

In summary, the 2B5 load center modification to provide diverse electrical connections is currently the only aspect of the ANO-1 FLEX strategy that will not be in full compliance with Reference 1 by the ordered schedule date of February 2015. As a result, full compliance with the mitigation strategies required by Reference 1 and described in Reference 3 for ANO-1 will be delayed until startup from 2R24 currently scheduled for October 2015 (ANO-2 full compliance date). Relief/relaxation from the NRC Order EA-12-049 IV.A.2 requirements is therefore, requested for ANO-1.

References:

1. NRC Order Number EA-12-049, Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for BDBEEs, dated March 12, 2012 (OCNA031206) (ML12056A045)
2. Entergy letter to NRC, *OIP in Response to March 12, 2012, Commission Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for BDBEEs (Order Number EA-12-049)*, dated February 28, 2013 (OCAN021302) (ML13063A151)
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**Attachment 2 to**

**1CAN041401**

**List of Regulatory Commitments**

List of Regulatory Commitments

The following table identifies those actions committed to by Entergy Operations, Inc. in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

COMMITMENT	TYPE (Check One)		SCHEDULED COMPLETION DATE  (If Required)
	ONE- TIME ACTION	CONTINUING COMPLIANCE	
As an interim measure, instructions will be in place by startup from the Arkansas Nuclear One (ANO), Unit-1 refueling outage 1R25 for connecting a portable diesel generator to the 2B5 load center should the ANO-2 2B6 load center not be capable of being powered for some unforeseen reason during an extended loss of alternating current power.	X		Prior to ANO-1 Startup from 1R25 (February 2015)
The 2B5 load center modification will be the only aspect of the ANO-1 Diverse and Flexible Coping Strategies (FLEX) that will not be in full compliance with NRC Order EA-12-049 by the ordered schedule date of February 2015. Additionally, the other aspects of compliance with NRC Order EA-12-049 will be complete by 1R25 (e.g., FLEX Support Guidelines, training, equipment staged, and modifications installed).	X		Prior to ANO-1 Startup from 1R25 (February 2015)