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Manager, Licensing
Arkansas Nuclear One

OCAN091302

September 30, 2013

Mr. G. Edward Miller, Project Manager
Projects Management Branch
Japan Lessons-Learned Project Directorate
Office of Nuclear Reactor Regulation
11555 Rockville Pike
Rockville, MD 20852

SUBJECT: Assistance in Obtaining Information on Dams
Arkansas Nuclear One – Units 1 and 2
Docket Nos. 50-313 and 50-368
License Nos. DPR-51 and NPF-6

REFERENCES: 1. NRC Letter to Entergy, *Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident*, dated March 12, 2012 (OCNA031208) (ML12053A340)

2. NRC Interim Staff Guidance JLD-ISG-2013-01, *Guidance for Assessment of Flooding Hazards Due to Dam Failure*, Revision 0, dated July 29, 2013 (ML13151A153)

Dear Mr. Miller:

Entergy Operations, Inc. (Entergy) is re-evaluating flooding hazards at its nuclear power plant sites for the purpose of responding to the March 2012, request for information (RFI) (Reference 1). As part of this effort, Entergy has been gathering information from various government agencies and, in the case of dams, has recently contacted several districts of the United States Army Corps of Engineers (USACE). Based on the district telephone conversations, obtaining the information directly from the USACE is not possible due to its sensitive nature. As a result, Entergy requests the assistance of the NRC to obtain the information needed to complete the probable maximum flood, dam failure, and seiche hazard evaluations for the purpose of responding to the March 2012, RFI. In particular, Entergy requests that the NRC act as the interface between the USACE and Entergy and as outlined in Section 1.5.3 of Reference 2.

The information is needed to support the flooding re-evaluation at Arkansas Nuclear One (ANO). The specific information needed is from three USACE districts and is identified in the attachment to this letter. The flooding re-evaluation for ANO is due to the NRC in March 2014. In order to complete the analyses required to meet this schedule, the information requested from the USACE is needed by October 25, 2013. To coordinate data transfer, please contact Mr. Don Bentley at 479.858.4084.

This letter contains no new regulatory commitments. Should you have any questions regarding this submittal, please contact me.

Sincerely,

Original signed by Stephenie L. Pyle

SLP/nbm

Attachment: USACE Information Request

cc: Mr. Steven A. Reynolds
Regional Administrator
U. S. Nuclear Regulatory Commission, Region IV
1600 East Lamar Boulevard
Arlington, TX 76011-4511

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

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

U. S. Nuclear Regulatory Commission
Attn: Mr. Kaly Kalyanam
One White Flint North MS O-8 B1
11555 Rockville Pike
Rockville, MD 20852

U. S. Nuclear Regulatory Commission
Attn: Mr. Chris Cook
Two White Flint North MS 7-F3
11555 Rockville Pike
Rockville, MD 20852

Attachment to

0CAN091302

U.S. Army Corps of Engineers Information Request

U.S. Army Corps of Engineers Information Request

The intent of this request is to support hydrologic and hydraulic analysis of the Arkansas River, including development of the probable maximum flood and evaluation of the effects of upstream dam failure and seiche action. Each of the dams listed below has been identified as being either (a) likely to be “potentially critical” as defined in the NRC’s 2013 document titled “Guidance for Assessment of Flooding Hazards Due to Dam Failure,” JLD-ISG-2013-01, and/or (b) important to the hydrology of the study watershed as a result of reservoir flood control benefits. Entergy Operations Inc. (Entergy) is available to further discuss the objectives of the flooding hazard re-evaluation and the specifics of the data request with the United States (U.S.) Army Corps of Engineers (USACE). Entergy is also available to discuss data control requirements or confidentiality agreement requirements associated with receipt of the information. In addition, Entergy has the ability to withhold information from public disclosure pursuant to 10 CFR 2.390.

Little Rock District
U.S. Army Corps of Engineers
P.O. Box 0867
Little Rock, AR 72201-0867

A copy of the following documents or documents containing the following information:

1. Water control manuals, master reservoir regulation manuals, dam failure analyses, plans and section drawings that include basic dam, spillway, and outlet structure geometry as well as any hydraulic information (i.e., elevation-discharge-storage rating curves, spillway adequacy studies, design flood analysis, etc.) for the dams listed below:
 - Dardanelle Lock and Dam – AR00162
 - James W. Trimble Lock and Dam – AR00163
 - Ozark Lock and Dam – AR00164
 - Arthur V. Ormond Lock and Dam – AR00165
2. Arkansas River Water Control Master Manual and any flood studies performed for the Arkansas River and any existing hydrologic and/or hydraulic computer models for the Arkansas River. For example, the “Arkansas River Navigation Study – Navigation Channel Depth Appendix A: Hydrology and Hydraulics” indicates that a Hydrologic Engineering Center River Analysis System (HEC-RAS) model was developed for the McClellan-Kerr Arkansas River Navigation System.
3. Bathymetric data for McClellan-Kerr Arkansas River Navigation System for the reach between Trimble Lock and Dam and Ormond Lock and Dam.

Tulsa District
U.S. Army Corps of Engineers
1645 S 101 E Avenue
Tulsa, OK 74128-4609

A copy of the following documents or documents containing the following information:

1. Water control manuals, master reservoir regulation manuals, dam failure analyses, plans and section drawings that include basic dam, spillway, and outlet structure geometry as well as any hydraulic information (i.e., elevation-discharge-storage rating curves, spillway adequacy studies, design flood analysis, etc.) for the dams listed below:
 - Wister Lake – OK10315
 - Eufaula Lake – OK10308
 - W.D. May Lock and Dam – OK10305
 - Robert S. Kerr Lock and Dam – OK10301
 - Webbers Falls Lock and Dam – OK10304
 - Tenkiller Lake – OK10311
 - Fort Gibson Lake – OK10314
 - Keystone Lake – OK10309
 - Skiatook Lake – OK22200
 - Oologah Lake – OK10310
 - Optima Lake – OK20510
 - Kaw Lake – OK20509
 - Great Salt Plains Lake – OK10319
 - Copan Lake – OK21489
 - Hulah Lake – OK10312
 - Chouteau Lock and Dam – OK10303
 - Arcadia Lake – OK22178
 - Heyburn Lake – OK10313
 - Newt Graham Lock and Dam – OK10302
 - Canton Lake – OK10316
 - Birch Lake – OK20508
 - Fort Lake Supply – OK10318
 - Elk City Lake – KS00002
 - Fall River Lake – KS00003
 - Toronto Lake – KS00011
 - El Dorado Lake – KS00027
 - John Redmond Lake – KS00004
 - Marion Lake – KS00006
 - Council Grove Lake – KS00001
 - Big Hill Lake – KS00049

2. Arkansas River Water Control Master Manual and any flood studies performed for the Arkansas River within the district along with existing hydrologic and/or hydraulic computer models for the Arkansas River. For example, the “Arkansas River Navigation Study – Navigation Channel Depth Appendix A: Hydrology and Hydraulics” indicates that a HEC-RAS model was developed for the McClellan-Kerr Arkansas River Navigation System.

Albuquerque District
U.S. Army Corps of Engineers
4101 Jefferson Plaza NE
Albuquerque, NM 87109

A copy of the following documents or documents containing the following information:

1. Water control manuals, master reservoir regulation manuals, plans, dam failure analyses and section drawings that include dam and outlet structure geometry as well as any hydraulic information (i.e., elevation-discharge-storage rating curves, spillway adequacy studies, design flood analysis, etc.) for the dams listed below:
 - Conchas Dam – NM00006
 - Trinidad – CO00050
 - John Martin Dam & Reservoir – CO01283
2. Flood studies performed for the Arkansas River and any existing hydrologic and/or hydraulic computer models for the Arkansas River within the district.

GENERAL DISCUSSION

It is understood that the information being requested is of a sensitive nature and a large volume of information. In an effort to help facilitate a timely transfer of that information judged to be absolutely critical for the completion of the necessary calculations, a list has been developed below which prioritizes requested data and describes its intended use:

1. Basic summary information about the configuration of all dams listed above including: key elevations (normal pool, spillway crest, top of dam, etc.); control gates, spillway, and lock configurations and geometries; spillway discharge curves; reservoir elevation to storage volume relationships; and general information on structural/seepage stability. This information is typically contained in summary documents such as the Phase I Inspection Reports produced as part of the National Dam Safety Program. This information is planned to be used as part of the development of the Hydrologic Engineering Center Hydrologic Modeling System (HEC-HMS) hydrologic model of the contributory Arkansas River watershed upstream of the Dardanelle Lock and Dam and calculation of probable maximum flood (PMF) hydrographs. The model developed with this information is used to calculate hydrographs resulting from theoretical dam failures. Information on the dams immediately upstream and downstream of the Arkansas Nuclear One (ANO) site is used to develop the HEC-RAS hydraulic model for the purpose of calculating stage hydrographs and peak water surface elevations during the PMF and the dam failure flood mechanisms.
2. Reservoir release rules describing the operations of reservoir outlets, spillway gates, and locks during flood flows and/or graphs indicating stage/discharge curves during flood operations. This information is usually included in Water Control/Regulation Manuals. Only those portions of the manuals describing release operations during floods are critical. Alternatively, a summary of the general operating procedures could be provided. This information is used as part of the HEC-HMS hydrology model to develop outflow hydrographs from the upstream dams. Information on the release rules for the dams immediately upstream and downstream of ANO is planned to be

incorporated into the HEC-RAS hydraulic model. This information is needed for all of the dams listed above.

3. Bathymetric data for Lake Dardanelle. This information is used in the development of the HEC-RAS hydraulic model and also in the examination of potential seiche-induced flooding. It is expected that this information resides with the Little Rock District.
4. Remaining bathymetric data for McClellan-Kerr Arkansas River Navigation System for the reach between Trimble Lock and Dam and Ormond Lock and Dam. This information is planned to be used in the development of the HEC-RAS hydraulic model. It is expected that this information resides with the Little Rock District and/or Tulsa District.
5. Cross-Section data for the McClellan-Kerr Arkansas River Navigation System (as indicated in the Arkansas River Navigation Study – Navigation Channel Depth Appendix A: Hydrology and Hydraulics) between Trimble Lock and Dam and Ormond Lock and Dam. This information is planned to be used to develop the HEC-RAS hydraulic model and thereby compute stage hydrographs and peak water surface elevations during the PMF and the dam failure flood mechanisms. It is expected that this information resides with the Little Rock District and/or Tulsa District. Cross-sections could be independently developed by combining information from publically-available terrestrial digital elevation models and the bathymetric data requested above, but use of existing USACE data would likely serve to simplify any future Federal review of the model.
6. The other information requests have been made in order to develop a more complete understanding of the hydrology and hydraulics of the Arkansas River Watershed and the McClellan-Kerr Arkansas River Navigation System. While considered to be very useful, it is of lesser priority.

Please note that existing dam failure inundation maps and dam failure analyses are not absolutely necessary for the completion of the calculations. In the event that security sensitivity precludes the release of this information, it is anticipated that the dam failure analyses could be completed without these documents.