

July 29, 2014

Dr. Ian Thompson, Director
Historic Preservation Department, THPO
Choctaw Nation of Oklahoma
PO Box 1210
Durrant, OK 74702-1210

SUBJECT: RE: US NUCLEAR REGULATORY COMMISSION, NRC EARTHQUAKE
RECONNAISSANCE, ARKANSAS, MISSOURI, AND TENNESSEE

Dear Dr. Thompson:

I apologize for the delay in responding to your letter dated March 14, 2013, in which you requested topographic maps regarding a paleoliquefaction study we are conducting. We have recently completed gathering United States Geological Survey quadrangle maps at a scale of 1:24,000, which are contained in the enclosed compact disc.

River Reconnaissance Field Work

As described in our letter to you dated February 15, 2013, the Nuclear Regulatory Commission (NRC), through a contractor, has conducted and plans to conduct, river reconnaissance field work, carried out along eroded river cutbanks and drainage ditches to identify liquefaction features. The river reconnaissance field work involves the use of a canoe or motorboat to travel down river sections to visually locate sand blows and dikes, which are types of liquefaction features. We anticipate locating 2 to 14 features per 10 km stretch of river. At locations where liquefaction features are characterized, we anticipate scraping a thin layer of soil from the river bank (approximately 2 cm deep) over an area of 17 cm by 17 cm. At some locations, we may scrape up to 5 cm into the river bank over an area of 1.3 m by 1.3 m. Within this scraped area, we anticipate collecting a small tubular soil sample from the river bank, approximately 5 cm in diameter and 15 cm long, as well as a few organic samples such as leaves or twigs to be used in radiocarbon dating. Sampling will be done by hand with a standard shovel or smaller hand tools. Due to the limited scope and minor disturbance of this river reconnaissance field work, the NRC concluded that there would be no adverse effect on historic properties from such field work. The Arkansas State Historic Preservation Officer concurred with this finding on September 6, 2012 (please see enclosed letter).

To date, river reconnaissance field work has been conducted in Arkansas on the Black River near Jacksonport and Elgin, during October 26-27 and November 4, 2013, and on the White River near Oil Trough, Clarendon, and Saint Charles, during November 5-8, 2013. Further river reconnaissance field work in Arkansas is planned during the August to November timeframe of 2014 and 2015. The exact timing of such work is dependent on river levels and weather conditions.

Proposed Trench Excavations

In addition, as noted in our letter of February 15, 2013, the NRC is proposing to excavate a series of trenches at two sites in Arkansas. The enclosed April 2014 site evaluation report entitled, *Pre-Trenching Evaluation Report for the Stiles and Garner I Paleoliquefaction Sites in Northeastern Arkansas*, summarizes the geological and cultural resources investigations completed in March 2013 by M. Tuttle and Associates, the NRC's contractor. As a result of these investigations, proposed trench locations have been selected for the purpose of collecting specific geological and archaeological data associated with paleoliquefaction features identified. The NRC also plans to excavate trenches at two additional sites that have not yet been selected. Once these sites have been selected, the NRC will correspond with the Choctaw Nation of Oklahoma and provide another site evaluation report as part of the consultation process, if these sites are located in areas where the Choctaw Nation has interests.

Description of Proposed Project

The proposed paleoliquefaction project area is located in northeast Arkansas where two areas have been identified for further study. The project areas are located in Mississippi County (referred to as the "Stiles Site") and in Craighead County (referred to as the "Garner Site"), shown in Figures 1.3 of the enclosed site evaluation report. The undertaking would involve the excavation of three trenches at the Stiles Site to collect geologic data only. Using a backhoe, each trench will be excavated to a depth of 1.5 meters, by 1 meter wide (width of a backhoe bucket) with varying lengths. Proposed trench 1 will be 24 meters long; proposed trench 2 will be 14 meters long and proposed trench 3 will be 12 meters long (Tuttle, et. al 2014). The undertaking would also involve the excavation of two trenches at the Garner Site. The trenches will be excavated to a depth of 1.5 meters, by 1 meter wide and 10 and 12 meters long (Tuttle, et. al. 2014). The proposed trench and archaeological excavations are scheduled for May and June of 2015.

Area of Potential Effects (APE)

The NRC has defined the APE as being limited to the direct area of impact caused by the five trenches being excavated depicted on the attached U.S. Geological Survey topographic 7.5' Dixie and Blytheville quadrangles (Figures 1 and 2). Additional topographic maps of the APE are shown in Figures 2.3 and 2.8 in the enclosed site evaluation report. Due to the size of excavation and equipment (under 30 meters long, presence of a backhoe), duration (10-20 hours) and temporary nature (over a period of 7-14 days) of this project, the NRC has not identified an indirect effects APE beyond the area of direct impact depicted in Figures 1 and 2.

Results of Historic Properties and Cultural Resources Investigation

In March 2013, M. Tuttle and Associates performed an archaeological survey and subsurface testing to confirm the presence or absence of historic properties or cultural resources within the project APE (at both the Stiles and Garner Sites). Details on the records search and methodology are described in the enclosed site evaluation report in Chapter 5. In summary, the archaeological team excavated shovel test units within the footprint of the proposed trenches. Four archaeological test units were excavated at the Stiles Site and two archaeological test units were excavated at the Garner Site.

During a March 2013 site evaluation, the NRC contractor established the presence of archaeological site 3CG1255, a pre-contact surface lithic scatter containing a subsurface component within the Garner Site APE, and the absence of any archaeological resources or historic properties at the Stiles Site APE (archaeological site form attached) (Tuttle, et.al. 2014).

To avoid impacting subsurface components of archaeological site 3CG1255 which is located below the paleoliquefaction feature, M. Tuttle and Associates propose to carefully excavate the trenches at the Garner Site APE. As detailed in Chapter 6 of the enclosed site evaluation report, the proposed trench excavation methods entail careful skimming by a backhoe through the disturbed plow zone followed by archaeological testing if intact archaeological deposits or archaeological features are found. Archaeological testing will be completed in accordance the *Guidelines for Archaeological Fieldwork and Report Writing* (2010). Archaeological data recovery methods include careful documentation of archaeological features which will be mapped, excavated and bagged if they are identified. If intact archaeological deposits are found, controlled excavation of hand-dug 1-meter by 1-meter test units will occur. Recordation will include documentation of excavation levels, photographs of excavation floors and profiles, as well as the provenience collection of artifacts. Cultural materials and artifacts will be analyzed, interpreted and summarized in an archaeological testing report in accordance with the and *Guidelines for Archaeological Fieldwork and Report Writing* (2010) (Tuttle, et.al. 2014).

Archaeological sites 3CG1256 and 3CG1257 consisting of surface scatters were also identified just outside the Garner Site APE and will not be impacted by project activities (archaeological site forms attached). An historic-era building likely built before 1930 is located 760 meters northeast of the Garner Site and is also outside the Garner Site APE. Photographs of this structure are included in the enclosed report on pages 13-14 in accordance with Arkansas NHPA Section 106 Compliance guidelines. No known formal documentation exists for this house within the Arkansas Archaeological Survey and Arkansas Historic Preservation Program databases.

National Register Evaluation Recommendation and Finding of Effect

Based on the details provided in the enclosed site evaluation report, the NRC has determined that the archeological site 3CG1255 is not eligible for inclusion on the National Register of Historic Places. The NRC further finds, based on the proposed archaeological excavation plan, which is described in the enclosed site evaluation report, that the proposed trenching activities will not have an adverse effect on archaeological site 3CG1255 or any other historic properties or cultural resources, assuming such properties or resources were present in the Garner Site APE. If during the course of excavating the trenches at archaeological site 3CG1255, significant archaeological material data is uncovered, a follow up report will be submitted to your office and the Arkansas SHPO, in accordance with the *Guidelines for Archaeological Fieldwork and Report Writing* (2010). Additionally, the NRC finds that there are no historic properties or cultural resources present within the Stiles Site APE.

I. Thompson

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Please let us know whether you concur with our findings, as described in the paragraph above. If you have any questions or require additional information regarding our planned activities and our findings, or about the river reconnaissance field work, please contact Thomas Weaver by phone at (301) 251-7654 or by email at Thomas.Weaver@nrc.gov. We look forward to your feedback.

Sincerely,

/RA/

Michael J. Case
Director, Division of Engineering
Office of Nuclear Regulatory Research

Enclosure
As stated

cc:

Dr. Thomas Weaver, P.E., NRC/RES/DE/SGSEB
Mr. Andrew Pessin, Esq., NRC/OGC/GCLR/RMR
Mr. Stuart Easson, NRC/FSME/DILR/ILB

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OFFICE	RES/DE/SGSEB	SUNSI REVIEW	RES/DE/SGSEB	OGC (via email)	D: RES/DE
NAME	T. Weaver	T. Weaver	J. Burke	A. Pessin	M. Case
DATE	7/25/14	7/25/14	7/28/14	7/02/14	7/29/14

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