

Buckberg, Perry

From: Thomas Saporito <saprodani@gmail.com>
Sent: Thursday, July 30, 2015 11:08 AM
To: Buckberg, Perry
Subject: [External_Sender] 2.206 Petition Attachments (Fracking)
Attachments: Attachment-One.pdf; Attachment-Two.pdf

Mr. Buckberg,

Please find two attachments to be applied to the 2.206 Petition (fracking) submitted to the NRC for processing. Should you have any questions regarding this submission, please do not hesitate to contact me via email at your convenience.

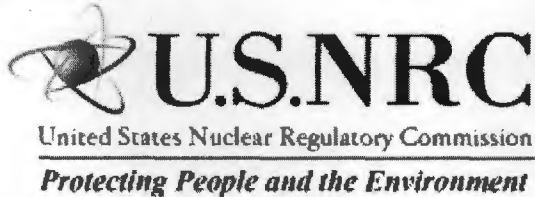
King regards,

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ATTACHMENT-ONE



Home > Facility Locator > Find NRC-Licensed Facilities by Region or State > Oklahoma

Oklahoma

NRC's Regional Office in Arlington (Region IV) is responsible for carrying out the agency's duties in Oklahoma. No operating nuclear reactors or fuel cycle facilities are located in Oklahoma. Oklahoma is an Agreement State.

More information about Oklahoma's role in ensuring the safe use of radioactive materials can be obtained from the NRC Office of State Program's Directory of State Regulations, Legislation, and Web Sites.

Operating Nuclear Power Reactors

- none

Facilities Undergoing Decommissioning

- FMRI (Fansteel), Inc.
- Kerr-McGee Cimarron Corporation Former Fuel Fabrication Facility
- Kerr-McGee Corporation's Cushing Refinery Site
- Sequoyah Fuels Corporation (SFC)

Page Last Reviewed/Updated Friday, February 20, 2015

ATTACHMENT-TWO

This release can be found in the USGS Newsroom at:
<http://www.usgs.gov/newsroom/article.asp?ID=4132>.



News Release

February 19, 2015

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Coping with Earthquakes Induced by Fluid Injection

MENLO PARK, Calif.— A paper published today in *Science* provides a case for increasing transparency and data collection to enable strategies for mitigating the effects of human-induced earthquakes caused by wastewater injection associated with oil and gas production in the United States. The paper (<http://www.sciencemag.org/lookup/doi/10.1126/science.aaa0494>) is the result of a series of workshops led by scientists at the U.S. Geological Survey in collaboration with the University of Colorado, Oklahoma Geological Survey and Lawrence Berkeley National Laboratory, suggests that it is possible to reduce the hazard of induced seismicity through management of injection activities.

Large areas of the United States that used to experience few or no earthquakes have, in recent years, experienced a remarkable increase in earthquake activity that has caused considerable public concern as well as damage to structures. This rise in seismic activity, especially in the central United States, is not the result of natural processes.

Instead, the increased seismicity is due to fluid injection associated with new technologies that enable the extraction of oil and gas from previously unproductive reservoirs. These modern extraction techniques result in large quantities of wastewater produced along with the oil and gas. The disposal of this wastewater by deep injection occasionally results in earthquakes that are large enough to be felt, and sometimes damaging. Deep injection of wastewater is the primary cause of the dramatic rise in detected earthquakes and the corresponding increase in seismic hazard in the central U.S.

"The science of induced earthquakes is ready for application, and a main goal of our study was to motivate more cooperation among the stakeholders — including the energy resources industry, government agencies, the earth science community, and the public at large — for the common purpose of reducing the consequences of earthquakes induced by fluid injection," said coauthor Dr. William Ellsworth, a USGS geophysicist.

The USGS is currently collaborating with interested stakeholders to develop a hazard model for

induced earthquakes in the U.S. that can be updated frequently in response to changing trends in energy production.

"In addition to determining the hazard from induced earthquakes, there are other questions that need to be answered in the course of coping with fluid-induced seismicity," said lead author of the study, USGS geophysicist Dr. Art McGarr. "In contrast to natural earthquake hazard, over which humans have no control, the hazard from induced seismicity can be reduced. Improved seismic networks and public access to fluid injection data will allow us to detect induced earthquake problems at an early stage, when seismic events are typically very small, so as to avoid larger and potentially more damaging earthquakes later on."

"It is important that all information of this sort be publicly accessible, because only in this way can it be used to provide the timely guidance needed to reduce the hazard and consequences of induced earthquakes," said USGS hydrologist and co-author of the paper, Dr. Barbara Bekins.

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