



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

May 7, 2018

Mr. Bernard Bonifas  
Mine Manager  
Uranerz Energy Corporation  
1701 East "E" Street  
Casper, WY 82605

SUBJECT: URANERZ ENERGY CORPORATION, NICHOLS RANCH ISR PROJECT, U.S.  
NUCLEAR REGULATORY COMMISSION WELL PLUGGING PROCEDURE  
VERIFICATION, SOURCE MATERIALS LICENSE SUA-1597 (CLOSES  
CAC/EPID 000092/04009067/L-2018-LNS-0000)

Dear Mr. Bonifas:

By letter dated March 1, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18060A447), Uranerz Energy Corporation submitted a well plugging procedure to the U.S. Nuclear Regulatory Commission (NRC) staff for review and approval.

Based on the information provided in the well plugging procedure submittal, the NRC staff has determined that the proposed procedure is acceptable as documented in the NRC staff's verification (enclosed).

If you have any questions, please contact Mr. Ron Linton, Project Manager, at 301-415-7777 or, by email at [ron.linton@nrc.gov](mailto:ron.linton@nrc.gov).

As a result of this verification, the NRC staff has completed its work on Cost Activity Code (CAC) and Enterprise Project Identifier CAC/EPID 000092/04009067/L-2018-LNS-0000. Therefore, this CAC/EPID will be closed.

B. Bonifas

2

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Sincerely,

*/RA/*

Ron C. Linton, Project Manager  
Uranium Recovery Licensing Branch  
Division of Decommissioning, Uranium Recovery,  
and Waste Programs  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: 040-09067

License No.: SUA-1597

Enclosure: NRC Well Plugging Procedure Staff Verification

cc: BJ Kristiansen, P.G. WDEQ-LQD  
Ryan Schierman WDEQ-URP

SUBJECT: URANERZ ENERGY CORPORATION, NICHOLS RANCH ISR PROJECT, U.S. NUCLEAR REGULATORY COMMISSION WELL PLUGGING PROCEDURE VERIFICATION, SOURCE MATERIALS LICENSE SUA-1597 (CLOSES CAC/EPID 000092/04009067/L-2018-LNS-0000) DATED MAY 7, 2018

cc: BJ Kristiansen, P.G. WDEQ-LQD  
Ryan Schierman WDEQ-URP

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**ADAMS Accession No.: ML18120A136**

OFFICE	DUWP	DUWP	DUWP
NAME	RLinton	BvonTill	RLinton
DATE	05/03/2018	05/07/2018	05/07/2018

**OFFICIAL RECORD COPY**

**Technical Evaluation Report  
Staff Verification of Well Plugging Procedure  
Uranerz Energy Corporation  
Source Material License SUA-1597**

DATE: May 7, 2018

DOCKET: 040-09067

LICENSE NO.: SUA-1597

LICENSEE: Uranerz Energy Corporation

SITE: Nichols Ranch In-Situ (ISR) Project

PROJECT MANAGER: Ron Linton

TECHNICAL REVIEWER: Ron Linton

## **Background**

The Well Plugging Procedure for the Uranerz Energy Corporation (Uranerz) Nichols Ranch ISR Project (Nichols Ranch) is described Section 6.1.5 of the Nichols Ranch U.S. Nuclear Regulatory Commission (NRC) Source Material License Application Technical Report. Section 6.1.5 of the Technical Report states that any deviation from the procedure will be approved by the NRC and the Wyoming Department of Environmental Quality.

Uranerz obtained approval of the well plugging procedure deviation from the WDEQ, Land Quality Division (LQD), in a letter dated September 28, 2017, and approval of a subsequent modification to the procedure deviation from the WDEQ-LQD in an e-mail dated October 3, 2017. By letter dated March 1, 2018, Uranerz has requested NRC's review and approval of the well plugging procedure deviation (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18060A447).

## **Staff Review and Analysis**

The well abandonment and plugging procedures outlined in Section 6.1.5 of the Technical Report are used for the abandonment of Class III wells at Nichols Ranch. Uranerz has indicated that introduction of sealant materials, i.e. cement or bentonite, into the mining zone during plugging operations may cause a localized decrease in porosity/permeability and/or undesirable interactions with mining fluids which may have negative effects during mining and/or restoration. Uranerz proposed deviation will prevent possible infiltration of sealant materials into the mining zone.

Uranerz has indicated that their proposed deviation in the procedure reduces the potential of bentonite, cement or other sealant materials from entering the mining zone. Uranerz has indicated that except for the addition of frac sand in the underreamed zone, the overall plugging

procedure remains unchanged but that due to the addition of water permeable frac sand, some additional controls are necessary. Uranerz indicated that review of the well completion logs will ensure that the well is not completed below the exempt aquifer and additionally, that the tagging of the well after addition of frac sand would ensure that sand was not located above the exempt aquifer and would allow sealant materials to properly seal the exempt aquifer from above unauthorized zones preventing fluid movement between zones.

The WDEQ-LQD has reviewed the proposed change and was in agreement that the use of sand as an abandonment material opposite the production zone is acceptable. The WDEQ-LQD indicated it will monitor the results of the modified procedures because it appears that placing a sand pack in the ore zone rather than a cement plug may be more effective than the current WDEQ-LQD plugging procedures.

NUREG 1569, "Standard Review Plan for In Situ Leach Uranium Extraction License Applications" (ADASM Accession No. ML032250177), Section 6.1, states that:

In conducting these evaluations, the [NRC] reviewer shall consider the technical evaluations conducted by a state or another federal agency with authorities overlapping those of the NRC. Ground-water compliance and protection reviews are the primary technical areas impacted by overlapping authorities. The desired outcome is to identify any areas where duplicative NRC reviews may be reduced or eliminated. The NRC staff must make the necessary evaluations of compliance with applicable regulations for licensing the facility. However, the reviewer may, as appropriate, rely on the applicant's responses to inquiries made by a state or another federal agency to support the NRC evaluation of compliance.

The NRC staff has reviewed the Nichols Ranch proposed deviation to the well plugging procedure and the evaluation provided by the WDEQ. The NRC staff agrees with the conclusion of the WDEQ. The NRC staff notes that the review by the WDEQ falls within the ground-water compliance and protection technical area of review as discussed in NUREG-1569. The NRC staff notes that the purpose of well plugging is to protect groundwater resources and movement of water into non-exempt aquifers. The well plugging procedure, as modified, will still utilize a well plugging gel formulated for well abandonment above the production zone to protect groundwater resources as outlined in the Technical Report, Section 6.1.5.

## **Conclusion**

Based on the information provided in the well plugging procedure deviation submission and the review and approval by the WDEQ-LQD, the NRC staff finds that there is reasonable assurance that the updated procedures are adequate to protect public health, safety and the environment. The NRC staff finds that a license amendment is not necessary as this procedure is outlined within the License Application and is not a specific license condition requiring amendment.