Macke, Brian

From: David V. Hamilton [dhamilton@prescocorp.com]
Sent: Monday, February 16, 2004 11:40 AM
To: Beaver, Tricia
Cc: Macke, Brian
Subject: Re: Rulison Site

Thanks for the information. Per our previous discussion,will you be able
to
compile a list of the concerns and other issues expressed at the forum
and
the hearing from yours and Brian's notes. I would like to furnish to the
others here at Presco and discuss how to move forward.
Please don't hesitate to call or e-mail on any questions you may have.
Thanks for your help.

David V. Hamilton
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1717 Woodstead Court
The Woodlands, Texas 77380
Office: 281-367-8697
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----- Original Message -----
From: "Beaver, Tricia" <Tricia.Beaver@ogcc.state.co.us>
To: <dhamilton@prescocorp.com>
Sent: Thursday, February 12, 2004 3:53 PM
Subject: FW: Rulison site is a mini Yucca Mountain

> David - I thought you might be interested in this article that was
sent
> to us.
>
> -----Original Message-----
> From: Richardson, Nicole
> Sent: Thursday, February 12, 2004 8:43 AM
> To: Griebling, Richard; Beaver, Tricia; Macke, Brian
> Subject: FW: Rulison site is a mini Yucca Mountain
>
> Rich, Brian and Tricia
> This e-mail was received in our general e-mail box. I forwarded it to
> John Ashby as requested and am also forwarding it to you in case you
are
> interested.
>
> Nicole Richardson
>
> -----Original Message-----
> From: Vernon Brechin [mailto:vbrechin@igc.org]
> Sent: Thursday, February 12, 2004 4:11 AM
> To: dnr.ogcc@state.co.us
> Cc: Macke, Brian
> Subject: Rulison site is a mini Yucca Mountain
>
> Dear COGCC staff member:
>
> Please forward the following comments to Commissioner
> John Ashby.
>
> Vernon Brechin
>
>

> ---
> Thursday, February 12, 2004
> Dear Mr. Ashby:
>
> I read David Frey's article titled "Commission OKs drilling
> near nuke site" which was published in the February 11, 2004
> edition of the Aspen Daily News. The article concerned an
> underground nuclear explosion site that I've been
> independently researching for about 15 years. Perhaps you
> know that the public has been left in the dark by the DOE
> which is responsible for the Rulison site. The DOE often
> gives the public the impression that little radioactivity
> remains from the September 10, 1969 nuclear blast. What they
> fail to mention is that much of the data, concerning the blast
> debris, remains classified Secret Restricted Data. The DOE
> continues to control the blast cavity area and does not allow
> independent sampling from that area. By putting a lot of
> different data sources together it is possible to estimate
> what still lies deeply buried at the site.
>
> The Project Rulison detonation involved a nuclear explosive
> that had a 43 kiloton yield, about 2.6 times the energy of
> the bomb dropped on Hiroshima, Japan. The depth of the blast
> was 8,426 feet, the deepest nuclear blast ever conducted.
> Still, protesters on the surface were bounced off the ground.
> Nuclear explosives are simply small nuclear reactors that are
> designed to fission about one-half their nuclear fuel
> (typically Pu-239) in under a microsecond. Their waste
> debris has a composition that is similar to spent nuclear
> reactor fuel. One difference is that nuclear explosive
> debris is, typically, very rich in the Plutonium-239 isotope.
>
> There is a double-standard involved in the treatment of the
> high-level nuclear waste, called spent nuclear fuel, and the
> blast debris resulting from the detonation of nuclear
> explosives. In the case of spent nuclear fuel this material
> is being kept isolated from the environment until a proper
> disposal site is approved. The one site that is being
> considered is at Yucca Mountain, Nevada. The EPA regulations
> state that debris must be contained for 10,000 years though
> the contained Pu-239 isotope will remain a potential hazard
> for about a quarter-million years. The repository is
> supposed to keep the radioactive waste well above the water
> table for thousands of years.
>
> No such requirements existed for DOE in its past conduction
> of atmospheric and underground nuclear tests. The fact is,
> about a third of the 834 blasts were conducted below or just
> above the local water tables. For the ten off-site test
> sites, they were all conducted well below the local water
> tables. The radioactive isotope, most likely to flow with
> the local water, is tritium which has about a 12.5 year
> half-life. This means it can pose a threat for around 100
> years. Other isotopes of concern are fission products like
> cesium-137 and strontium-90 which have a half-life of about
> 30 years and can remain a potential threat for something like
> 600 years. These isotopes remain in the blast cavity region.
> They were not bled-off with the gas flaring operations. In
> most nuclear explosions, around a kilogram of unfissioned
> plutonium-239 fuel is blasted into the surrounding rock.
> Most of it ends up in the highly fractured rock slag that
> pools at the bottom of the blast cavity. This is then mixed
> with the blast chimney rock that falls into the molten pool.
> Clearly, what remains is a far cry from the containment of
> spent nuclear fuel that is supposed to be buried in thick
> stainless steel casks. DOE often counters such issues by
> saying the most of the blast debris is encased in glass.

> I point out this is not the sort of glass that high-level
> nuclear waste materials are being mixed with. DOE also
> points out that plutonium is highly insoluable and tends not
> to travel with the local water. A few years ago DOE was
> surprised to see Pu-239 had hitched a ride on particles
> called colloids.
>
> The DOE selectively releases data intended to protect itself.
> For example, its true that much of the tritium was bled from
> well during the flaring operations, but they fail to mention
> that some of the tritium became part of the water molecules
> in the fracture zone. On a mass basis, very little of
> ratioactive isotopes escaped up the well shaft since they were
> not in a gaseous state.
>
> Though there was little radioactivity that reached the
> surface of the Rulison site, DOE mounted a surface cleanup
> campaign in the mid-1970s. After that the site was,
> essentially, abandoned. About 20 years later DOE got
> Congress to fund another round of surface cleanup. The most
> recent one is now, largely, concluded. Still, the
> remediation program is addressing the subsurface
> contamination. Under that program, none of the subsurface
> contamination is to be removed or contained. Instead, a
> mathematical model is being developed to estimate the
> near-term flow. The DOE plans call for monitoring the site
> for the next hundred years. After that it expects passive
> institutional controls to prevent future contact with the
> buried debris and potentially, contaminated water. One
> should look at the stewardship record of the DOE and then ask
> how long have most empires lasted.
>
> The monument plaque at Surface Ground Zero (SGZ) reads
>
> PROJECT RULISON
> NUCLEAR EXPLOSIVE
> EMPLACEMENT WELL (R-E)
>
> Site of the second nuclear gas stimulation experiment in the
> United States. One 43 kiloton nuclear explosive was
> detonated in this well, 8,426 feet below the surface on
> September 10, 1969.
>
> No excavation, drilling, and/or removal of subsurface
> materials below a depth of 6,000 feet is permitted within
> Lot 11, NE 1/4 SW 1/4, of Section 25, Township 7 South, Range
> 95 West, 6th Principal Meridian, Garfield County, Colorado,
> without U.S. Government permission.
>
> U.S. Energy Research and Development Administration
> September 1976
>
>
> Notice: That the plaque text makes no mention of radioactive
> debris burial at this site, or of there being a potential
> hazard that will last for hundreds of thousands of years.
>
> Despite DOE's claims that most of the contamination has been
> removed from the well, my understanding is that the above
> restrictions remain in effect and need to continue for about
> a quarter-million years. Although I have not measured the
> latest gas drilling proposal locations, it appears that they
> may encroach upon the restricted area. This may indicate
> that DOE's site stewardship assurances are not worth very
> much.
>
> The article contained some errors. This Project Plowshare

> (Peaceful Nuclear Explosion (PNE)) test was not intended to
> "break up the rock layers below to make it easier to extract
> oil shale for fuel." It was, in fact, the second of three
> experiments to break up the rock in order to stimulate the
> flow of natural gas from a tight formation. Later
> experiments were planned in Wyoming to break up oil shale
> formations. Those experiments were canceled along with the
> nearly two decade old Project Plowshare program.
>
> One of the results of the Project Rulison experiment was it
> was found that the extracted natural gas was more radioactive
> than expected. Radioactive tritium had become part of some
> of the methane molecules. The key sponsor was the Austral
> Oil Company. It lost a great deal of money on this project,
> partly due to public concerns about the blast's effects on
> the environment. To recoup some of the lost funds the oil
> company tried to get permission to sell the gas and feed it
> to customers. This move failed and soon after the company
> went under.
>
> New well encroachers should pay heed. A conceptual analysis
> to remediate the U.S. underground nuclear test site estimated
> that a partial cleanup could cost up to $7.29 trillion. DOE
> said that was impractical and settled, instead, for long-term
> institutional control which was estimated to cost 8,000 times
> less. It assumes that the loaned land of the test site will
> always remain restricted from public access.
> Source: "Focused Evaluation of Selected Remedial
> Alternatives for the Underground Test Area" (DOE/NV--465)
> April 1997, Environmental Restoration Division, Nevada
> Operations Office, U.S. Department of Energy, Washington, DC.
> http://www.osti.gov/servlets/purl/469154-Il8yqP/webviewable/469154.pdf
> See Table 8-1 on paper page 8-3 (PDF page 137 of 153)
>
> Presently, the DOE's Nevada Site Office, located in North Las
> Vegas, Nevada is charged with responsibility for the Rulison
> site subsurface. Perhaps a better caretaker would be a party
> that has no interests in downplaying their potential
> liabilities.
>
>
> Vernon Brechin
> Independent Researcher
>