



**DEPARTMENT OF ENERGY**  
Office of Civilian Radioactive Waste Management  
Office of Geologic Disposal  
Yucca Mountain Site Characterization Project Office  
P.O. Box 98608  
Las Vegas, NV 89193-8608

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JAN 27 1994

Robert F. Pritchett  
Technical Project Officer  
for Yucca Mountain  
Site Characterization Project  
Reynolds Electrical & Engineering Co., Inc.  
P.O. Box 98521  
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ISSUANCE OF SURVEILLANCE RECORD YMP-SR-94-020 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION (YMQAD) SURVEILLANCE OF REYNOLDS ELECTRICAL & ENGINEERING CO., INC. AND RAYTHEON SERVICES NEVADA AT THE YUCCA MOUNTAIN SITE, NEVADA (SCP: N/A)

Enclosed is the record of Surveillance YMP-SR-94-020 conducted by the YMQAD at the Yucca Mountain site on January 4, 1993.

The purpose of the surveillance was to verify implementation of the Borehole Security Program.

This surveillance is considered completed and closed as of the date of this letter. A response to this surveillance record and any documented recommendations is not required.

If you have any questions, please contact either Robert B. Constable at (702) 794-7945 or Fred H. Lofftus at (702) 794-7190.

Richard E. Spence, Director  
Yucca Mountain Quality Assurance Division

YMQAD:RBC-1708

Enclosure:  
Surveillance Record YMP-SR-94-020

Delete all distribution except: CF, NRC PDC + NRC's full text

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JAN 27 1994

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OFFICE OF  
RADIOACTIVE WASTE MANAGEMENT  
U.S. DEPARTMENT OF ENERGY  
WASHINGTON, D.C.

QUALITY ASSURANCE SURVEILLANCE RECORD

SURVEILLANCE DATA

<b><sup>1</sup>ORGANIZATION/LOCATION:</b> Reynolds Electrical and Engineering Company, Inc. (REECO)/Raytheon Services Nevada (RSN)	<b><sup>2</sup>SUBJECT:</b> Borehole Security	<b><sup>3</sup>DATE:</b> 1/4/94
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**<sup>4</sup>SURVEILLANCE OBJECTIVE:**  
Verify implementation of the Borehole Security Program as Described in Technical Direction Letter RSN-92-003

<b><sup>5</sup>SURVEILLANCE SCOPE:</b> Verify Borehole Security Identification and approximate location by examination of selected boreholes.	<b><sup>6</sup>SURVEILLANCE TEAM:</b> Team Leader: <u>E. H. Lofftus</u> Additional Team Members: <u>J. R. Doyle</u>
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<b><sup>7</sup>PREPARED BY:</b> <u>E. H. Lofftus</u> <u>1/3/94</u> Surveillance Team Leader Date	<b><sup>8</sup>CONCURRENCE:</b> <u>A. C. Skirce</u> <u>1-3-94</u> QA Division Director Date
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SURVEILLANCE RESULTS

**<sup>9</sup>BASIS OF EVALUATION/DESCRIPTION OF OBSERVATIONS:**

See page 2.

**<sup>10</sup>SURVEILLANCE CONCLUSIONS:**

See page 3.

<b><sup>11</sup>COMPLETED BY:</b> <u>E. H. Lofftus</u> <u>1/19/94</u> Surveillance Team Leader Date	<b><sup>12</sup>APPROVED BY:</b> <u>A. C. Skirce</u> <u>1/21/94</u> QA Division Director Date
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Block?

On January 4, 1994, a surveillance was performed to verify the implementation of the Borehole Security Program as described in the Technical Direction Letter (TDL) RSN-92-003, Revision 0.

The following personnel were contacted during the surveillance.

A.W.Girdley, Department of Energy, Field Test Representative  
 W. J. Glasser, Reynolds Electrical and Engineering Company, Inc. (REECO),  
 Quality Assurance (QA) Manager  
 DJ. Tunney, RSN, QA Manager  
 E.L. Wright, RSN, Principal Project Engineer

In addition, L. S. Linden of Science Applications International Corporation, a Sample Management Facility Field Resource Geologist, accompanied the surveillance team as an observer.

It was verified during the surveillance that of the 31 boreholes examined for the integrity of the borehole cover or caps, ten were found to have their locking side chains loose enough as to allow the cap to be lifted off the casing leaving the borehole interior exposed. The ten boreholes with unsecured caps are as follows:

USW UZN	71	USW UZN	16
USW UZN	76	USW UZN	36
USW UZN	73	USW UZN	52
USW UZN	11	USW UZN	54
USW UZN	15	USW UZN	56

The remaining 21 boreholes that were examined and found to be acceptable are listed below:

USW UZN	74	USW UZN	72	USW WT	1
USW UZN	75	USW UZN	68	USW WT	25
USW UZN	67	USW UZN	17	USW WT	15
USW UZN	48	USW UZN	49	USW WT	18
USW UZN	50	USW UZN	51		
USW UZN	53	USW UZN	55		
USW UZN	60	USW UZN	58		
USW UZN	57	USW UZN	59		
USW UZN	61				

Each of the 31 boreholes were physically inspected for security, identification, and their location was verified on a map of the Yucca Mountain Site. During the surveillance, Nonconformance Report (NCR) YMPO-94-004 was issued by the Surveillance Team Leader to identify the ten boreholes with unsecured caps. In addition, as part of the NCR disposition, RSN has agreed to evaluate all remaining boreholes for compliance to the Borehole Security Program.

Block 10

With exception of the loss of integrity of the ten boreholes listed in Block 9 which was documented on NCR YMPO-94-004, implementation of the Borehole Security Program appears to be in accordance with TDL RSN-92-003.