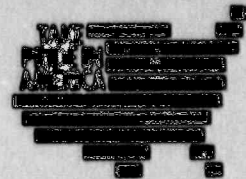




United States Department of the Interior

BUREAU OF MINES

PITTSBURGH RESEARCH CENTER
COCHRANS MILL ROAD
POST OFFICE BOX 18070
PITTSBURGH, PENNSYLVANIA 15236-0070



June 26, 1989

United States
Nuclear Regulatory Commission
Region 1
Nuclear Materials Safety Section B
~~631 Park Avenue~~ 475 Alleghate Road
King of Prussia, PA 19406

Gentlemen:

Pittsburgh Research Center requests that its byproduct material license No. 37-01712-12, Amendment No. 01 be amended to allow licensed material to be used at Lake Lynn Laboratory, an offsite test facility which is under the jurisdiction of the Pittsburgh Research Center. Located about 60 miles southeast of Pittsburgh, this 406-acre site has provided an isolated setting for large-scale explosion tests and mine-fire research since 1982 (See attachment).

Should you have any questions or comments please contact Walt Evans at (412) 892-6608 or FTS 723-6608.

Sincerely,

Walter E. Evans

Walter E. Evans
Radiation Protection Officer

Attachment

FEE EXEMPT

9001160113 890905
REG1 LIC30
37-01712-12 PDR

JUL 26 1989

THE LAKE LYNN LABORATORY

An explosion of methane or coal dust in an underground coal mine can kill anyone in its path as it rumbles through the mine passageways ultimately spewing flame and dust from the mine portal. Over the years, thousands of coal miners have died in such explosions.

Fortunately, coal mine explosions are far less commonplace today than they once were, except at the Lake Lynn Laboratory of the Interior Department's Bureau of Mines. At Lake Lynn, coal mine explosions are never accidental, and no one ever dies. Meticulously planned and precisely monitored, the Lake Lynn explosions will save lives.

The Bureau's Lake Lynn Laboratory is a highly sophisticated explosion test facility and experimental mine, located in the rural foothills of Pennsylvania, about 60 miles southeast of Pittsburgh, and extending underground into West Virginia. This provides an isolated setting for large-scale explosion tests and mine-fire research. At Lake Lynn, Bureau researchers can ignite and monitor massive explosions of gas and coal dust in the mine to determine how the explosions propagate, how to stop them, and how to prevent them from happening at all.

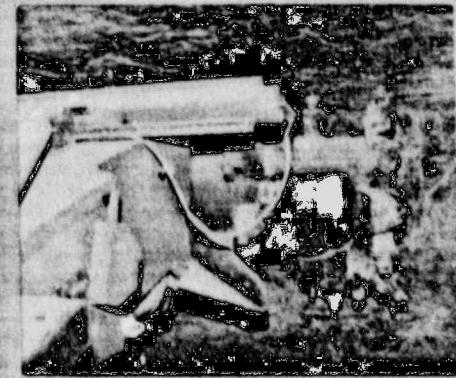
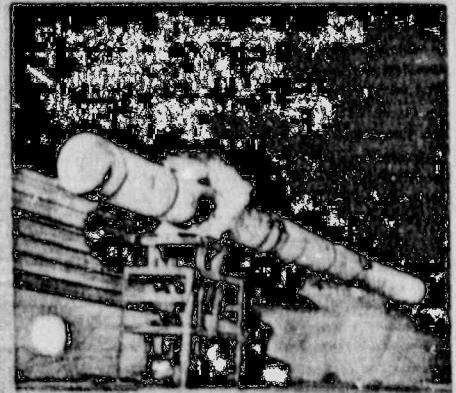
The Lake Lynn Laboratory is located at an abandoned limestone quarry, where underground entries were excavated into the "highwall" that remained when surface mining was discontinued. From the still-intact old underground workings, the Bureau tunneled four new entries, each roughly 18 feet wide and 6 feet high, with a combined length of 7,500 feet. The limestone formation is ideal for its new purpose — stable, allowing development of a mine similar in entry size and proportions to a coal mine, but not subject to the weathering and roof spalling or flaking common in coal mines. The Federal government leases the 406-acre site from Martin Marietta Corporation.

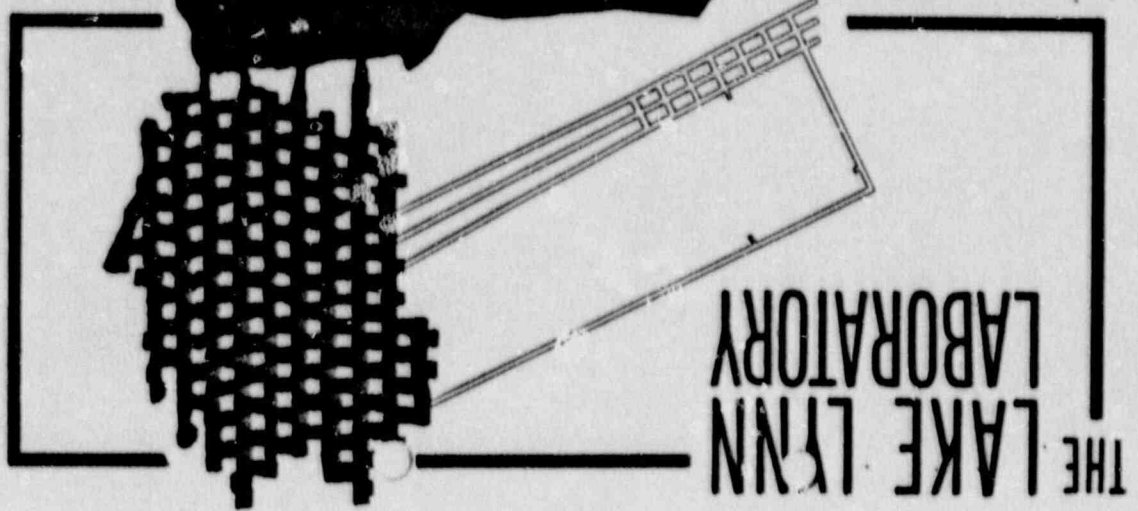
Lake Lynn is designed to be representative of the newest coal mines, in which relatively wide entries are made possible by modern roof support techniques. The long entries can also simulate the layout of longwall operations, allowing full-scale tests of explosions like those that might occur in the growing number of U.S. mines with longwall sections.

A highly flexible design meets many research needs. Two massive 67-ton explosion-proof bulkheads can be moved on rails in the mine floor to vary the mine layout. Thus the effects of explosions in mines of various configurations can be studied. By selectively closing or opening the bulkhead, a room and pillar section or a longwall face with either single or multiple entries can be simulated.

A sophisticated electronic system, connected by more than 27,000 miles of wire, allows researchers to control and monitor conditions inside the mine from a control building located just outside the underground workings. To initiate an explosion, natural gas is pumped into the mine, released at two gas mixing chambers, and remotely ignited. Multiple safety interlocks ensure that explosions can be initiated only from the control building.

Once an explosion has occurred or a fire has started, 50 data-gathering panels throughout the mine collect information on the rapidly changing mine conditions and feed the data to a computer in the control building. The panels activate movie cameras, explosion barriers, and sampling instruments. The panels also monitor static pressure in the mine, detect the arrival of flame, and measure flame radiation, air movement and velocity, dust concentration, gas concentration and temperature, pressure on the bulkheads, and effectiveness of the triggered explosion barriers. Information from the gathering panels is used to evaluate the effectiveness of explosion barriers and machine-mounted quenching devices, to investigate the layering of methane gas in large workings, and to determine the potential toxicity of explosive fumes and diesel engine emissions. While aimed initially at coal mines, much of this research is also applicable to oil shale and other mines.



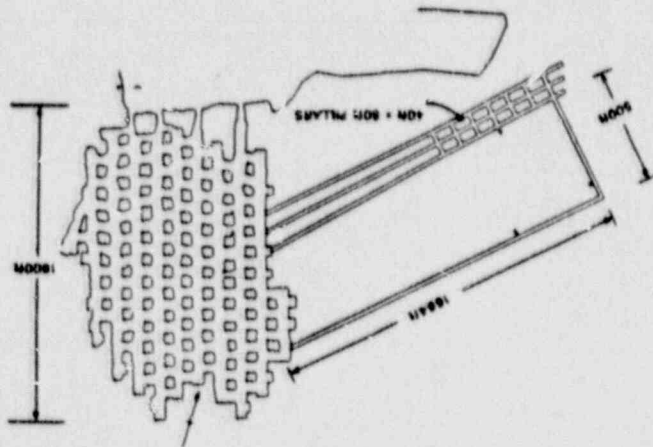


As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.



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Other work that requires the safe, isolated surroundings offered by Lake Lynn includes evaluating innovative roof support procedures, testing prototype equipment before transferring it to an operating mine, evaluating instruments for measuring highwall stability, and conducting research on new explosives remote from residential areas. The results of this research are applied in the development of safer mines, equipment and procedures, and Federal and State health and safety standards. The smaller Experimental Mine at Bruceton, Pennsylvania, for many years the center of Bureau explosion research, is used in conjunction with the Lake Lynn Laboratory for enhanced explosion research. Both mines are under the direction of the Bureau's Pittsburgh Research Center.





030-19475

United States Department of the Interior

BUREAU OF MINES

PITTSBURGH RESEARCH CENTER
COCHRANS MILL ROAD
POST OFFICE BOX 18070
PITTSBURGH, PENNSYLVANIA 15256

June 22, 1989

Ms. Doris J. Foster
U. S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Dear Ms. Foster:

This is to confirm our conversation today concerning modification of Materials License 3701712-12 to permit the authorized users described in Condition 12 to use Troxler Model 3411B gauges at the U. S. Bureau of Mines Lake Lynn facility in Fairchance, PA as well as the Cochran's Mill Road facility as specified in the Conditions section, part 10.

In addition, Richard Poling's name should be removed from the authorized user list since Mr. Poling has retired.

If you require additional information, please contact me.

Sincerely,

Robert B. Webster

Robert B. Webster
Environmental Scientist

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110920

OFFICIAL RECORD COPY ML16

JUN 26 1989

M3-10
6-30-89

(FOR LFMS USE)
INFORMATION FROM LTS

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

PROGRAM CODE: 03121
STATUS CODE: 0
FEE CATEGORY: EX 3P
EXP. DATE: 19920430
FEE COMMENTS:

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED

APPLICANT/LICENSEE: INTERIOR, DEPARTMENT OF THE
RECEIVED DATE: 890626
DOCKET NO: 3019475
CONTROL NO.: 110920
LICENSE NO.: 37-01712-12
ACTION TYPE: AMENDMENT

2. FEE ATTACHED

AMOUNT: ϕ
CHECK NO.: ϕ

3. COMMENTS

SIGNED EMW
DATE 6-30-89

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE 03 IS ENTERED / /)

1. FEE CATEGORY AND AMOUNT:

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:

AMENDMENT

RENEWAL

LICENSE

3. OTHER

SIGNED _____
DATE _____