Action Description Memorandum

for the

Facilities Capability Assurance Program (FCAP)

FY 1992 FCAP Item:

Steam and Condensate System Upgrades

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By: Frank S. Adams
Richard L. Bauer
Carol R. Anderson

EG&G Mound Applied Technologies
Miamisburg, Ohio 45343

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1.0 CONCISE DESCRIPTION OF THE PROPOSED ACTION

This ADM documents the evaluation of the potential environmental impact hazards from the Facilities Capability Assurance Project (FCAP), FY 1992, Line Item, Steam and Condensate Systems Upgrades.

1.1 DESCRIPTION AND SCOPE OF PROJECT

Facilities Capability Assurance Project, Steam and Condensate Systems Upgrades is a $4,900,000 Line Item project for FY 1992. The project is identified in the FY 1992 budget submission documents as Project No. 92-DA-02.

The project consists of upgrades to the steam and condensate systems and brine water softener distribution lines to ensure that production requirements can continue to be met. The three parts of the Steam and Condensate Systems Upgrades include:

a) Boiler replacement and installation.

b) Power House Building expansion.

c) Site piping replacements.

1.2 SPECIFIC COMPONENTS OF THE PROJECT

Specific components of Part A of the project are as follows:

a) Replacement of the existing Boiler No. 1 with a 70,000 pound per hour gas/oil fired steam boiler similar to Boiler No. 2, which was installed in FY 1984.

b) The installation of a new boiler (Boiler No. 3), designed to be compatible with the new replacement Boiler No. 1.

Specific components of Part B of the project are as follows:

a) The 2600 ft² Powerhouse building expansion shall provide for the following:

   1) Boiler No. 1 replacement and associated boiler breeching, fans and economizers.

   2) Boiler No. 3 installation and associated boiler breeching, fans and economizers.

   3) Central control room.
4) Workshop for maintenance personnel and their equipment hoods.
5) Offices for Powerhouse and utilities foremen.
6) Reference room.
7) Locker room and restrooms for male and female employees.
8) Break room.
9) Storage space for spare parts supporting chillers and boilers.

Specific components of Part C of the project are as follows:

a) Replace 1320 ft of exiting 6" steam from the Powerhouse to SM/PP hill with an 8" steam main. Stanchion supports will be upgraded or replaced as required.

b) Reinsulate 1320 ft of 2" condensate piping from the SM/PP hill to the Powerhouse.

c) Replace insulation on 700 ft of 6" steam piping and 2" condensate return piping from the south side of the Development Standards (DS) Building to the Powerhouse.

d) Replace 900 ft of 2" condensate return piping from the north side of R (Research), B (Production), SW (Nuclear Component Evaluation) and I (Production) Buildings on the main hill. This piping return condensate from these buildings to the Powerhouse. Included in this project are new stanchion supports for the piping.

e) Replace 2100 feet of 3" brine water softener piping from the Powerhouse to Building 24 (Water Treatment Plant).

2.0 LOCATION OF THE ACTION

The 306-acre Mound site is located adjacent to the southern boundary of Miamisburg, Montgomery County, Ohio. Mound is approximately 10 miles south of metropolitan Dayton, Ohio.
3.0 POTENTIAL ISSUES

3.1 MOUND’S FINAL ENVIRONMENTAL IMPACT STATEMENT (EIS)

There are no program/project elements known to be in conflict with Mound’s site EIS. Mound’s final EIS is formally documented in DOE/EIS-0014, dated June 1979.

3.2 HISTORIC AND NATIONAL LANDMARKS

The only historic landmark in the vicinity of Mound is the Miamisburg Mound, an ancient Indian mound located 120 m (380 ft) east-southeast of the Mound facility in the Mound State Memorial Park. No activity associated with this project will adversely impact this landmark.

Compliance by the Mound facility with the National Historic Preservation Act (Public Law 89-665) was assured by an archaeological survey. This survey is documented as "Public Archaeology Report No. 18," Laboratory of Anthropology, Wright State University, Dayton, Ohio, December 1987.

3.3 FLOODPLAIN/WETLANDS

No facilities associated with this project are located on a floodplain or in areas considered as wetlands as defined in 10 CFR Part 1022. Detailed hydrology information can be found in Section 2.3.5 of the Mound’s EIS (DOE/EIS-0014, June 1979). The estimated elevation of the adjacent Great Miami River during a maximum flood is 710 F.S.L. All parts of this project are above this elevation.

3.4 ENDANGERED AND THREATENED SPECIES

The Federal and the State of Ohio lists of endangered and threatened species have been reviewed, and personnel of the regional office of the U.S. Fish and Wildlife Service have been consulted on his matter. In consideration of the nature and habitats of those few species listed for the southwest Ohio area, the probability of endangered or threatened species occurring on-site is extremely remote. The 306-acre site has been greatly altered through construction and use, and does not provide such species an ideal habitat. There are no known records of endangered or threatened species for the site.
3.5 CONSTRUCTION AND OPERATIONS

Construction activities will be controlled, as required, to conform with Mound’s Loss Prevention and Environmental Control (LP&EC) System requirements. Controls could include, for example, appropriate OSHA-approved construction practices and safeguards, seeding and sodding of disturbed earth for erosion control and grading to control drainage. Radioactively contaminated soil and sediment will be tested. If the materials exceed the contamination limits, they will be removed and boxed by a Mound dedicated crew and shipped to the Nevada Test Site for disposal. All applicable DOT regulations will be followed.

3.6 THE PROJECT'S MAJOR ENVIRONMENTAL ISSUES

There are no major environmental issues. Replacement Boiler No. 1 and new Boiler No. 3 will be installed complete with control systems including state-of-the-art oxygen and CO monitoring and controls for optimum energy efficiency. In addition, both the boiler systems will be monitored by the existing Andover DDC control system for the recording and analysis of fuel consumption, condensate return rate, make-up water rate, boiler feed rate, steam generation rate and the economizer, entering and leaving, water and air temperatures.

The boiler replacement and the new boiler will provide reliable steam and condensate service that is vital to maintaining control of the temperature and humidity levels within production buildings. This control is necessary year-round to comply with environmental standards established by the DOE and design agencies. Such control is required for production tolerances and thereby to meet programmatic missions.

The expansion of the Powerhouse will create sufficient space for the replacement boiler and the new boiler. The new expansion will also ease the severe overcrowding of equipment which hampers personnel safety during maintenance and repair of equipment. The expansion of the Powerhouse will provide much needed space for offices, locker rooms, and other needed spaces.

The existing 6" steam main (1320) will be replaced by new 8" Schedule 40 carbons steel pipe. Any existing asbestos insulation shall be removed in accordance with the Regional Air Control Authority (RAPCA) regulations. The new insulation will be Fiberglass sized for the most life cycle cost effective thickness. The existing condensate piping and insulation will be replaced with new Schedule 80 carbon steel pipe, support brackets and Fiberglass insulation. The existing Sodium Chloride Brine Water Softener welded seam piping will be replaced with seamless Schedule 80 carbon steel pipe and painted.
These upgrades will provide much needed steam reliability and capacity along with fuel efficiency for Mound's facilities. Boiler efficiencies are expected to climb from 70% to 85%. The new Boiler No. 3 is sized so that it can carry the entire summer load and by operating with either No. 1 or No. 2 boiler can maintain the winter load, thus increasing our reliability. It will ensure that Mound will continue to operate economically and effectively in order to meet their programmatic mission.