DOE/EIS-0092-F



Final Environmental Impact Statement

Conversion to Coal Holyoke Water Power Company Mt. Tom Generating Station Unit 1 Holyoke, Hampden County, Massachusetts

May 1983

U.S. Department of Energy Economic Regulatory Administration Office of Fuels Programs



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May 1983

U.S. Department of Energy

Economic Regulatory Administration Office of Fuels Programs Washington, D.C. 20585



Responsible Agency:

Title of Proposed Action:

Designation:

Abstract:

Further Information:

U.S. Department of Energy Economic Regulatory Administration Office of Fuels Programs Fuels Conversion Division

Issuance of Notice of Effectiveness for Prohibition Order to Mt. Tom Generating Station Unit 1, Holyoke Massachusetts

Final Environmental Impact Statement

Ms. Anne Randolph Office of Fuels Programs Fuels Conversion Division Economic Regulatory Administration 1000 Independence Ave., S.W. Room GA-093 Washington, D.C. 20585

This Final Environmental Impact Statement (FEIS) responds to comments on the Draft Environmental Impact Statement (DEIS) (DOE/EIS-0092-D, October 1982) and includes any necessary additions and corrections. The supporting information furnished in the DEIS should be reviewed and is incorporated herein by reference. This FEIS assesses the potential impacts associated with the issuance of a Notice of Effectiveness for the Prohibition Order to Mt. Tom Generating Station Unit 1, located in Holyoke, Massachusetts. If made effective, the prohibition order would prohibit the utility from using either natural gas or petroleum products as a primary energy source in the affected unit; the utility proposes to conform to the order by returning Unit 1 to burning lowsulfur coal. The utility converted to coal December 3, 1981 under the provisions of a Delayed Compliance Order issued by EPA on November 24, 1981.

Major issues of environmental concern relating to the conversion have been determined through the public scoping process and through discussion with other concerned agencies, and were found to include air and water quality, noise, encroachment on the 100-year floodplain, and waste storage and disposal. These issues, as well as reasonable alternatives in the areas of plant conversion options, fuel type, air and water pollution control, ash disposal, and transportation, are discussed in the EIS. In an effort to avoid excessive paper work and costly reproduction, the DEIS has been incorporated by reference and has not been reprinted in the FEIS.

SUMMARY

INTRODUCTION

The Mt. Tom generating station is in Holyoke, Massachusetts, on the west bank of the Connecticut River. The plant, which was completed in 1960, was designed to burn coal as the major energy source. The unit was converted to oil firing in 1970; it continued to burn oil from that date until December 1981 except for a short period during the oil embargo of 1973-1974 when it was switched back to burning coal.

On June 30, 1977, the plant was issued a prohibition order by the Department of Energy (DOE) under the Energy Supply and Environmental Coordination Act (ESECA). If finalized by a Notice of Effectiveness (NOE), this order would prohibit the plant from utilizing petroleum products as a major energy source. Under terms of a Memorandum of Understanding (MOU) with the State of Massachusetts and a Delayed Compliance Order (DCO) issued by the U.S. Environmental Protection Agency (EPA) Region I, Holyoke Water Power Company (HWP), owner of the facility, returned the plant to burning a low-sulfur coal in December 1981. HWP is a wholly owned subsidiary of Northeast Utilities System (NU). Northeast Utilities Service Company (NUSCO) has been acting as agent for HWP with regard to all activities required for conversion of the station to coal burning.

DOE has determined that issuance of an NOE is a major Federal action significantly affecting the quality of the human environment. A Draft Environmental Impact Statement (DEIS) was prepared and published in October 1982 by the Division of Fuels Conversion of the Economic Regulatory Administration of DOE as part of DOE's responsibility under the National Environmental Policy Act (NEPA). This Final EIS responds to comments received on the DEIS and incorporates the detailed analyses of that document by reference, with appropriate modifications and additions noted herein.

Major issues relating to reconversion of the plant to coal have been determined through the public scoping process and through discussion with other concerned agencies, especially EPA Region I; the Massachusetts Department of Environmental Quality Engineering (DEQE); and the Massachusetts Executive Office of Environmental Affairs. Issues of concern include: air quality, water quality, noise, waste storage and disposal, and encroachment on the 100-year floodplain. These issues, as well as reasonable alternatives to the utility's reconversion to low-sulfur coal as the major energy source, are discussed in this EIS. No new substantive issues were raised during the comment period on the DEIS.

PURPOSE OF AND NEED FOR ACTION

The oil embargo of 1973-1974 brought into sharp focus the Nation's dependence on imported oil. ESECA was passed by Congress in 1974 in response to the embargo. One of DOE's responsibilities under ESECA was to identify existing power plants that could most readily convert from use of petroleum products to another fuel. A group of facilities selected included those that had been originally designed to burn coal, but that had subsequently switched to oil or gas. The Mt. Tom generating station is one of these powerplants. Use of low-sulfur coal at this plant may save about 1.5 million barrels of oil per year over the remaining 20-year life of the plant when the facility is operating at the expected 80 percent capacity. This reduction in oil usage will contribute to lessening the country's dependence on imported oil.

ALTERNATIVES

As noted in the Council on Environmental Quality's (CEQ) regulations on preparation of environmental impact statements, the analysis of alternatives is the heart of an EIS. This EIS includes discussions of reasonable alternatives to the proposed action, which is issuance of an NOE. Issues of concern, as identified in the scoping process and in discussions with other agencies, are stressed.

DOE's alternatives are restricted to two: (1) to issue the NOE, or (2) to not issue the NOE. Under either of these alternatives, the utility has several options as noted in the following paragraphs and as discussed in the text of the DEIS. The utility's preferred option has been to convert the Mt. Tom generating station to burning low-sulfur coal. To expedite such a conversion, the utility entered into an agreement with the state regarding conditions for the conversion and conducted negotiations with EPA Region I to the same end. (See Low-sulfur Coal Conversion alternative discussed below.) Alternatives include: no action, under which the utility has several options including return to burning oil; the utility's preferred plan - reconversion to low-sulfur coal; use of alternative fuels; alternative ash disposal methods; alternative transportation methods; and alternative plant configurations.

No Action

Under the no action alternative, the utility could, among many options, elect to return to burning oil, could continue the conversion to coal, or could retire the plant.

Low-sulfur Conversion

Under the utility's response to the prohibition order, the Mt. Tom generating station returned to burning a low-sulfur coal (1.5 percent sulfur) in its single 148 megawatt unit. This will require about 384,000 tons of coal per year and could save approximately 1.5 million barrels of imported oil per year. It should be noted that from the mid 1970s to 1980 the plant operated as an intermediate load plant, burning only about 0.9 million barrels of oil per year while operating at less than the presently expected capacity. The coal is brought to the site by 50-car unit trains, two trains each week.

To help accomplish the conversion, the utility entered into a Memorandum of Understanding (MOU) with the Commonwealth of Massachusetts. Under the MOU, the Mt. Tom generating station began to burn low-sulfur coal in December 1981. As part of the requirements for the conversion, EPA Region I determined that a Delayed Compliance Order (DCO) could be issued for the facility and issued such an order on November 24, 1981, allowing the station to exceed currently permitted limits for particulate matter (PM) emissions for the period the DCO is in force (not to exceed 27 months; or until February 15, 1984). These increased emissions must maintain primary National Ambient Air Quality Standards (NAAQS) and must be reduced to within SIP limits as soon as a new precipitator can be purchased and installed.

A second critical element of the utility's conversion plan is implementation of an Oil Conservation Adjustment (OCA) to finance the conversion. Under Massachusetts law, the OCA permits the utility to establish the cost of oil and the cost of coal at the time of conversion and to reserve two-thirds of the cost differential for paying the costs of the conversion. The remaining one-third difference in cost is to be passed on to the ratepayer immediately. Once the conversion is paid for, the entire fuel cost savings will accrue to the ratepayers.

Initial construction required repair aud upgrading of existing coal handling and burning equipment and reactivation of ash and wastewater ponds and coal storage facilities.

Under the MOU and DCO, the present electrostatic precipitator has been overhauled to permit initial coal burning with PM emissions of 0.48 lb per million Btu. The emission level was reduced to $0.35 \text{ lb}/10^6$ Btu about 8 months after initial coal burning (by means of upgrading the present precipitator) and will be reduced to below oil fired emission rates when a new electrostatic precipitator is completed and installed. By February 15, 1984, or 45 days after installation of the new electrostatic precipitator, PM emissions will be reduced to $0.08 \text{ lb}/10^6$ Btu; this will mark the end of the DCO period.

Also under the MOU, HWP committed to modifications to the coal thawing equipment and to the car shaker facility to reduce noise impacts to nearby residences.

A detailed preconversion hydrogeologic study of the Mt. Tom site was completed in June 1981 by a consultant to the utility. This study characterized the hydrogeologic setting and identified the potential for degradation of water quality resulting from the storage and disposal of coal and ash at the site. As a result of this study, the coal pile and coal runoff areas have been lined, and coal leachate and runoff are collected. Also, the Special Wastewater Basin has been lined. Fnrther mitigative measures will be required should monthly monitoring show a degradation of ground or surface water quality due to coal storage or ash disposal.

Because much of the plant area lies within the 100-year floodplain of the Connecticut River there is concern over the use of onsite land, particularly for ash storage. The utility estimates that 103 acre-feet of flood storage volume would be displaced as a resnlt of coal conversion construction activity. As a result HWP has committed to providing compensatory storage for 300 acre-feet of flood waters during the 100-year storm event and to provide for ultimate disposal of all ash offsite. Onsite fly ash disposal was permitted through March 1, 1983. The existing dry fly ash system was refurbished and HWP began removal of fly ash for offsite disposal on January 12, 1983 (see <u>Ash</u> <u>Disposal</u> discussion below).

Fuels

Other fuels considered as potential major energy sources include high-sulfur coal, refuse-derived fuel (RDF), and wood/wood chips. None of these is considered viable: (1) high-sulfur coal would require use of a flue gas desulfurization (FGD) system, which would require construction of additional facilities, additional transportation, and additional storage acreages, and would introduce additional environmental concerns associated with FGD sludge disposal; and (2) neither RDF nor wood is available in sufficient quantities to make these reliable energy sources for the plant at this time.

Ash Disposal

The utility has refurbished an existing dry ash handling system for use in collecting dry ash for offsite disposal. This system requires use of the existing fly ash storage basin to collect about 5 percent of the total fly ash while the remainder is transported offsite for landfill disposal or, to the extent possible, for sale as a concrete admixture. Two existing DEQE-approved landfills, one in Chicopee and the other in Granby, have been designated for landfill disposal. By December 31, 1983 a new mechanical vacuum fly ash system will be installed and operated to collect and transport all fly ash offsite either for sale (preferentially) or landfill disposal. After that time, the only potential need for onsite fly ash disposal will be during emergencies caused by labor union strikes, landfill operator default, etc.; by failure of the dry fly handling system; or if extended oil-firing is required.

Bottom ash will be stored temporarily in one of two existing onsite basins for periodic removal and landfill disposal.

The alternative to offsite ash disposal is onsite disposal. This was the original proposed action but would require use of approximately 44 acre-feet of additional 100-year floodplain and increase the potential for degradation of ground water and surface water resources at the site.

Transportation

The plant site is not adjacent to waters navigable by barges. Also, no coal slurry pipelines are available or planned for construction in this area during the life of the plant. Therefore, rail delivery is the only feasible means of transporting coal to the station.

Other Alternatives

Because the plant is an existing electric generating station, and because it was originally designed to burn coal, most facilities were in place prior to modification to return to coal burning. There are no practical alternatives involving relocation of facilities that would provide an environmental advantage.

A rotary car dumper could be installed as an alternative to the car shaker. This would provide for faster unloading of coal cars and some reduction in noise, but at considerable additional cost.

ENVIRONMENTAL IMPACTS

As noted previously, major issues of concern are air and water quality, use of the floodplain, ash disposal, noise, and disruption of archaeological sites. Impacts to regional or site geology, aquatic or terrestrial biota, transportation, housing, labor market, or other socioeconomic factors are expected to be minimal.

Air Quality

Conversion to coal under the MOU and the DCO will increase $S \bullet_2$ emissions over the short-term (24-hour average or shorter), but not for the 30-day averaging period. $N \bullet_2$ emissions are estimated to increase by 1,500 tons per year. Neither of these changes will produce a significant impact when compared to emissions of $S \bullet_2$ and $N \circ_2$ on the regional scale. PM emissions increased nearly five fold (from 16.7 to 82.9 grams/second) over the first 8 months of coal burning. During the remainder of the DCO (about 17 months) they will be reduced to 3.6 times the rate under oil burning. Following installation of the new precipitator, they will be reduced to about 83 percent of pre-conversion emissions (all these emissions were calculated for the plant operating at 80 percent capacity).

Increases in fugitive dust can be expected during construction activities and after conversion as a result of ash- and coal-handling activities. Mitigative measures to reduce impacts of increased dust include wetting down of construction roads and uncovered slopes and ponds, enclosing conveyors, wetting down of the coal pile, and wet sluicing of ash (initially; later, fly ash will be collected dry.)

Water Quality

The Mt. Tom generating station currently has ten waste streams which are discharged under an NPDES permit issued in November 1981. Conversion to coal required modification of the permit for the fly ash and bottom ash discharges. Under present plans the ash and normal wastewater pond will not be lined, but the Special Wastewater Basin and the coal pile and coal pile runoff areas have been lined; any discharge from those areas will be routed through the wastewater treatment system.

A detailed hydrogeologic study was conducted at the plant site prior to the conversion. This study revealed the existence of a plume of contaminated water extending to the Connecticut River from the old coal pile area; the identification of this plume was the basis for the determination to line the coal pile and coal pile runoff areas. A second area of minor contamination was also noted in the southern part of the property in the vicinity of the old fly ash ponds, but it is believed this will be sufficiently diluted by ground water flow, soil attenuation, and mixing with river water that there will be no measurable change in quality of Connecticut River water. Under the MOU, a year of monitoring following conversion has been conducted; a final hydrogeologic report will be prepared by Gibbs § Hill for NUSCO, to be published in 1983. This report will address the potential need for a long-term ground water monitoring program to identify and correct any future significant contamination.

Floodplains

The utility has refurbished an existing fly ash handling system and began offsite disposal on January 12, 1983. By the end of 1983, a new dry fly ash system will be installed. After that date, all fly ash will be removed from the site (except during temporary emergency conditions) either for sale or for landfill disposal. These ash disposal plans mean that no additional 100-year floodplain storage capacity, beyond the 103 acrefeet required for initial plant conversion activities, will be required. As compensation, NU has agreed to provide 300 acre-feet of compensatory storage at the Northfield Mountain Pumped Storage Facility during a 100-year flood.

Had the alternative of onsite fly ash disposal been selected, an additional 44 acrefeet of floodplain storage would be required onsite.

DOE will issue a floodplain statement of findings with its Record of Decision prior to taking action on the issuance of a Notice of Effectiveness.

Ash Disposal

Offsite disposal and sale of ash will limit displacement of the 100-year floodplain to 103 acre-feet. There will be a slight increase in truck traffic in the plant vicinity. An estimated 40 to 45 truck loads per week will be required to transport the ash offsite. Also, continued surveillance of the existing landfills will be required by DEQE to avoid adverse effects at those sites. The alternative of ash disposal onsite over the life of the plant would have encroached on 44 additional acre-feet of flood storage and would have eliminated some 15 acres of prime farmland.

Noise

Experience during previous periods of coal burning indicates that increased noise levels were noticeable at residences across the river. HWP has made modifications to the shaker house, including lining portions of the building and erecting a sound barrier adjacent to the structure. A new electric thawing system is being installed which is quieter than the system previously used. Use of bulldozers and conveyors to move coal onsite and the coal crusher may increase noise levels by 5 to 10 dB, but noise levels at noise sensitive receptors will be below 65 dB. Unloading of coal will be restricted to certain hours as required by the MOU.

Archaeological Sites

A re-review of information on archaeological sites on the property by the State Historical Commission Staff indicated the presence of two sites on the property. An archaeological survey conducted by a consultant to the utility confirmed the presence of these sites. No other sign of significant cultural resources was identified. Most anticipated construction activity had been completed (the fly ash basin, the grub storage area, and the borrow pit) prior to the re-analysis by the Historical Commission. The utility will not conduct further construction in the area of the sites without consultation with the Massachusetts Historical Commission.

UNRESOLVED ISSUES

Issues remaining unresolved include: (1) the final floodplain determination to be made by DOE in its Record of Decision; (2) possible future need to line onsite ponds; and (3) extent of possible future contamination of surface and ground water. All factual information relevant to the Floodplain Decision issne has been included in the DEIS and FEIS. The latter two issnes will be addressed thoroughly in the final hydrogeologic report to be prepared by Gibbs & Hill for NUSCO and to be released in 1983. Preliminary data analyses reveal no threat to water resources from present conversion operations. Under the MOU, DEQE has full authority to require HWP to initiate appropriate mitigative actions should significant degradation be anticipated.

CONCLUSIONS

Conversion of the Mt. Tom generating station to coal burning will not produce longterm impacts to the environment if proposed monitoring programs and other similar mitigative actions are taken.

The cost of the conversion has been estimated at \$40 million. This cost will be offset by reductions in costs of fuel and resultant lower costs to the ratepayer (estimated at \$15 million per year). In addition, the conversion will permit a reduction of use of as much as 1.5 million barrels of imported oil per year, or 30 million barrels over the 20-year life of the plant.

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1.0 PURPOSE OF THIS DOCUMENT

In October 1982, the U.S. Department of Energy (DOE) published and distributed a Draft Environmental Impact Statement (DEIS) on the issuance of a Final Prohibition Order to Northeast Utilities System (NU) for Unit 1 of its Mt. Tom generating station in Holyoke, Massachusetts (DOE/EIS-0092-D). The DEIS was written pursuant to the National Environmental Policy Act (NEPA) of 1969. NU proposes to respond to the order by returning Unit 1 to burning low-sulfur coal and has commenced the conversion process. On December 3, 1981, NU initiated coal burning at the plant under the provisions of a Delayed Compliance Order (DCO) issued by the U.S. Environmental Protection Agency (EPA) on November 24, 1981.

A Massachusetts Draft Environment Impact Report (DEIR) pursuant to the Massachusetts Environmental Policy Act (MEPA) was filed with the Massachusetts Office of Environmental Affairs in August 1981. The Massachusetts Final EIR was published September 18, 1981.

This Final Environmental Impact Statement (FEIS) has been prepared to conform with the Council on Environmental Quality (CEQ) regulations (40 CFR Part 6) for implementing NEPA. The essence of the NEPA decision process is contained in the Abstract Sheet for the FEIS; it describes the proposed prohibition order, summarizes alternatives -- including mitigative measures -- and their impacts, and identifies and evaluates major concerns and issues of the proposal. In an effort to avoid excessive paperwork and costly reproduction, the DEIS text has not been reprinted in the FEIS. The supporting information furnished in the DEIS should be reviewed and is incorporated herein by reference.

Section 2.0 contains corrections and additions to the DEIS.

Section 3.0 contains the results of public participation in the EIS process. Included are copies of written communications submitted to DOE in response to the DEIS, together with the DOE's responses to each individual comment.

Section 4.0 of the FEIS lists the individuals involved in its preparation. Section 5.0 lists the agencies and groups from whom comments were requested on the DEIS. The final report of archaeological studies at the Mt. Tom site is given in Section 6.0.

2.0 ADDITIONS AND CORRECTIONS TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

Comments on the DEIS by agencies and the public expressed concerns regarding several aspects of the proposed conversion. Responses to specific comments are provided in Section 3.0 and Errata are given in Section 2.3. Section 2.1 describes aspects of the proposed action which have been changed from those described in the DEIS. These changes for the basis of several of the comment responses. Section 2.2 describes the effect of these changes on DOE's Floodplain Assessment. Figures 2-1, 2-2 and 2-3 are reproduced from the DEIS for the purpose of showing the Mt. Tom generating station facilities.

2.1 <u>CHANGES IN THE PROPOSED CONVERSION OF MT. TOM GENERATING STATION TO COMBUSTION OF</u> COAL AS THE PRIMARY ENERGY SOURCE

2.1.1 Offsite Disposal of Ash

In the DEIS, it was proposed that coal ash be disposed of in landfills located on th Mt. Tom property. Alternatives were sale for commercial use and disposal in approve landfills offsite. These alternatives were described thoroughly in the DEIS and, thus are not presented in 'detail here. However, as a result of additional investigation by th utility in the course of DEQE's Final Site Assignment Decision, it was determined tha (1) suitable landfills exist offsite for disposal of both fly and bottom ash and (2) potential market exists for sale of dry fly ash as a concrete admixture. Therefore, off site disposal and sale has been adopted as the proposed plan, and onsite disposal become the alternative. The utility has secured contracts with two DEQE-approved landfills fo disposal of ash. No additional land will be required for ash disposal basins on the site thereby limiting project displacement of 100-year floodplain storage volume to 10 acre-feet for which mitigation has been provided, as described in the DEIS.

In connection with this decision to eliminate use of the site for permanent as disposal, an existing dry fly ash handling system has been refurbished and placed int operation. Approximately 95 percent of the fly ash generated during 1983 will be eithe sold or trucked to the two existing offsite landfills. The remaining fly ash will b stored temporarily in the existing south fly ash basin as it settles from the hydroveyo system water. By the end of 1983 a new, mechanical vacuum fly ash system will be placed in operation and the only need for the existing south fly ash system, a labor strike or othe unavoidable condition which prevents delivery of the ash to the offsite landfills, o extended burning of oil at the plant.

As described in the DEIS, bottom ash will be collected alternately in one of two on site storage basins for periods of up to two years (Figure 2-3). When full, one basin will be cleaned out and the ash removed to an offsite landfill while the other basin i used for temporary ash storage.

2.1.2 Lining the Special Wastewater Basin

After discussions with DEQE and EPA, the utility redesigned its permanent wastewate treatment system to allow for treatment of increased flowrates of special wastewaters. A part of this revision, the Special Wastewater Basin (Figure 2-3) was provided with at 80-mil membrane liner in October 1982. This liner allows storage of high volume cleaning and coal pile drainage wastes without subjecting the ground water, and ultimately th Connecticut River, to the potential for contamination by percolation of these waste through the soil. This action further reduces the potential for significant contaminatios of local water resources.

Though redesigned, the wastewater treatment system will meet the same NPDES and Sub surface Discharge permit limitations.

2.2 FLOODPLAIN ASSESSMENT

2.2.1 Preliminary Floodplain Statement of Findings

Most of the existing station facilities were originally constructed in the 100-yea floodplain of the Connecticut River; these include the powerhouse, switchyard, railyards and the coal handling equipment. Also, since most of the site is within the floodplain there were no reasonable alternatives to the location of the coal storage and runoff area or the wastewater and bottom ash storage ponds. The fly ash basin, the plant site, an the oil storage area (Figure 2-2) were previously diked above the 100-year flood level an



Figure 2-1. Mt. Tom Generating Station and Vicinity.





Figure 2-3. Mt. Tom Generating Station Coal Conversion Modifications - Present Configuration

did not require additional flood storage as a result of conversion to coal. Totally ne construction in the floodplain includes the wastewater treatment building and switchges building which occupy less than than an acre. Redesigned structures in the floodplain include the railroad car thawing shed, the shaker house, the bottom ash basins, the waster water basins and the coal pile and coal pile sump area (see Figure 2-3). These cover less than 15 acres of the 77 acres of the 89-acre site lying within the floodplain. Mitigation includes the refurbishing and new construction of dikes to protect this 15 acres from the 100 year flood. The diking displaces approximately 103 acre-feet of flood storage volume as described by the utility in the Final Environmental Impact Report submitted to the State of Massachusetts in September 1981 as required by the MEPA process. Offset for this displacement has been provided by the utility in the form of 300 acre-feet of compensator storage at the Northfield Mountain Pumped Storage Facility. Analysis of flood condition indicates that addition of this upstream storage volume will effectively mitigate an increase in downstream flooding caused by coal conversion (Section 4.2.7 of the DEIS).

In compliance with Executive Order 11988, "Floodplain Management," Water Resource Council's "Floodplain Management Guidelines," and Department of Energy regulations "Com pliance with Floodplain/Wetlands Environmental Review Requirements" (10 CFR 1022), al ternatives have been identified and their environmental impacts evaluated. The evaluation included public comments made during the review period for the DEIS. A preliminary con clusion has been made by the Department of Energy that no practicable alternative exist to locating the project in floodplains and that the proposed action is designed to mini mize potential harm to or within the floodplain. Before action is taken on this project the Department of Energy will reach a final conclusion on these matters. A statement of findings containing this conclusion will be published in the Federal Register with the Record of Decision on the project.

2.2.2 Alternatives Sites

The only alternatives available to the DOE concerning this proposed action are is suance and non-issuance of the Notice of Effectiveness for the Prohibition Order to th Mt. Tom generating station. Therefore, alternate sites are not relevant to the DOE deci sion. For a discussion of the process through which the Mt. Tom station was chosen as candidate for a Prohibition Order, see Section 1.0 of the DEIS and the Draft NEREIS.

2.2.3 Alternatives at Proposed Site

As noted in Section 2.2.1, several of the modifications to the facility necessary t allow reconversion to coal involve structures which were originally constructed in th 100-year floodplain, including the coal pile and settling basins. For the converte station to utilize existing coal-related facilities (i.e., shelter house, thawing shed railyard, conveyors, and boiler house), the reactivated and newly constructed facilitie cannot practicably be relocated within the generating station site boundary to avoid th floodplain (see Figure 2-2). In addition, configuration of the site is such that it i bounded on one side (east) by the Connecticut River and on the other (west) side by a ra line and two highways.

2.2.4 No Action Alternative

The no action alternative to the proposed action would involve non-issuance of th Notice of Effectiveness by DOE. The utility could voluntarily convert to coal, retire th unit early, or return to operating with oil.

Voluntary conversion to coal would involve the same floodplain impacts as the proposed action. Early retirement and continued burning of oil would involve no action is the floodplain. Early retirement would require NU eventually to provide substitution for the 148 MWe now supplied by the unit. A return to burning oil would not satisfy the purpose and goal of FUA and would perpetuate the dependence of NU, and, to a lesser extent the United States, on imported petroleum fuels.

2.2.5 Mitigation Measures

The proposed activities will be small in scale and will occur in an already in dustrialized area. These activities will neither change the existing character of th floodplain nor alter the risk of losses due to flooding of adjacent property. Facilitie constructed in the floodplain will be floodproofed to withstand current forces and inunda tion. Floodproofing will include such items as diking and reinforcement to reduce floo damage. Further details concerning mitigation of floodplain impacts are contained j Section 4.2.2 of the DEIS. In particular, NU is providing 300 acre-feet of compensator storage at the Northfield Mountain Pumped Storage Facility.

2.2.6 Conclusion

Based on the above analysis, DOE has made a preliminary conclusion that no practicable alternative exists to locating the proposed action in the floodplain and that the proposed action has been designed to minimize potential harm to or within the floodplain. Before action is taken on this project, the Department of Energy will make a final conclusion on these matters. A statement of findings containing this conclusion will be published in the Federal Register with the Record of Decision on the project.

2.3 DRAFT ENVIRONMENTAL IMPACT STATEMENT ERRATA

 SECTION
 Page
 Location (paragraph, including fragments, and line in paragraph)

 SUMMARY
 ii
 4th paragraph, last line: CHANGE LINE TO READ: Coal is brought to the site by 50-car unit trains, two trains each week.

8th paragraph, 3rd line: CHANGE LINE TO READ: ...was reduced to 0.35 lb/10⁶ Btu about 8 months after initial coal burning (by means...

8th paragraph, 5th, 6th and 7th lines: CHANGE LINES TO READ: ... a new electrostatic precipitator is completed and installed. By February 15, 1984, or 45 days after installation of the new electrostatic precipitator, PM emissions will be reduced to $0.08 \ \text{lb}/10^6$ Btu; this will mark the end of the DCO period.

iii 2nd paragraph, 2nd line: ADD SENTENCE: HWP estimates that 103 acre-feet of flood storage volume would be displaced as a result of coal conversion construction activity.

2nd paragraph, last sentence: CHANGE SENTENCE TO READ: Onsite fly ash disposal is permitted through March 1, 1983.

3rd paragraph, 5th line: AFTER: environmental concerns, ADD: ...associated with FGD sludge disposal;

4th paragraph, 7th line: DELETE: , if required by the state,

4th paragraph, 10th line: AFTER: vehicular traffic, ADD: (estimated at 40 to 45 trucks per week)

5th paragraph, 1st sentence: DELETE ENTIRE 1st SENTENCE

5th paragraph, end of paragraph: ADD SENTENCE: Therefore, rail delivery is the only feasible means of transporting coal to the station.

SECTION Page Location (paragraph, including fragments, and line in paragraph) CHAPTER 1.0

1-3 6th paragraph, 7th line: DELETE: ...which will be produced...

1~5 Table 1-2, Title: DELETE: And Operating

Table 1-2, Footnote a: CHANGE: 145 to 148

1-7 1st paragraph, 2nd line: CHANGE LINE TO READ: ...requires a 50-car train (5,000 tons of coal) about every 3.5...
4th paragraph, 2nd line: CHANGE 145 to 148
6th paragraph, 6th line: CHANGE LINE TO READ: ...basin pH in the range of 6 to 9. ...

9th paragraph, 3rd line: CHANGE: electrostaic to electrostatic.

1-8 2nd paragraph: CHANGE LAST TWO LINES TO READ: ...impoundment, it will be pumped to the lined special wastewater basin.

SECTION Page	Location (paragraph, including gragments, and line in paragraph)
	3rd paragraph, 2nd line: CHANGE LINE TO READ: The NPDES permit, the DC and the Massachusetts Environmental Policy Act (MEPA) review are the
	4th paragraph, table, Outfall 010 and 011: CHANGE: Average per month fr 0.11 MGD to 1.20 MGD.

1-9 Section 1.6.3, 2nd paragraph, line 10: AFTER: ...ratepayers, ADD: On the capital cost of the conversion equipment is recovered, estimated to about 3 years, the full fuel savings will be passed on to the consumers.

CHAPTER 2.0

2-2 1st paragraph, 2nd line: AFTER: ...low-sulfur coal, ADD: (maximum sulf content of 1.21 lbs/10⁶ Btu heat input)

4th paragraph, 3rd line: AFTER: ...with a..., ADD: maximum

Table 2-1, 5th line: AFTER: ...9.0 maximum, ADD: (dry)

2-3 2nd paragraph, 1st line: CHANGE 1ST SENTENCE TO READ: The pulverizers we overhauled and the coal handling and transfer equipment was upgraded;

2nd paragraph: AFTER: ...upgraded; CHANGE SENTENCE TO READ: ...; maj boiler repairs were required before coal could be burned.

- 7th paragraph, 1st sentence: AFTER: ...of coal, CHANGE: will be...
- 8th paragraph, 2nd line: CHANGE: ...botom... to ...bottom...
- 8th paragraph, 4th sentence: DELETE: Entire 4th sentence.
- 8th paragraph, 9th line: CHANGE: ... but their preferred..., TO: ...b HWP's preferred...

8th paragraph, 11th line: AFTER: ...(see Section 2.5.3)..., ADD: ...or dispose of the ash offsite at a dedicated, DEQE-approved landfill area.

9th paragraph, 2nd line: CHANGE: ...will not be affected..., TO: ... not affected...

9th paragraph, 3rd line: CHANGE: ...will be..., TO: ...are...

9th paragraph, 7th line: CHANGE: ...wonld..., TO: ...will...

2-4 2nd paragraph, 3rd sentence: CHANGE SENTENCE TO READ: ...bottom ash slui water, coal pile runoff, and maintenance cleaning wastewater are collect separately. All discharges must be treated in the wastewater treatme system to conform with NPDES permit conditions.
4th paragraph, 2nd line: CHANGE: ...875,000..., TO: ...1,200,000...
4th paragraph, 6th line: CHANGE: ...expects to have a..., TO: ... attempting to find a...

5th paragraph, 11th line: CHANGE: A minimum of..., TO: Approximately... 7th paragraph, 2nd line: CHANGE: ...1.5 percent..., TO: ...1.21 lbs/1 Btu heat input...

2-11 UNDER: major disadvantages for low-sulfur coal, CHANGE: ...long-term... TO: ...short-term...

UNDER: Environmental impacts for low-sulfur coal, CHANGE: ...long-t($S \bullet_2$, TO: ...short-term SO₂.

8

SECTION Page	Location (paragraph, including fragments, and line in paragraph)
	UNDER: Major advantages for high-sulfur coal, DELETE: Lower sulfur emis- sions
CHAPTER 3.0	
3 - 1 3	Table 3-5: UNDER: Phosphates; High, CHANGE: 0.095, TO: 0.045
	Table 3-5: UNDER: Water temp. °C; high, CHANGE: 22.5, TO: 22.4
3-14	Table 3-6, Title: CHANGE: (in g/L , or ppb), TO: (in g/L , or ppb)
3-18	Section 3.2.2, 4th paragraph: DELETE 1st TWO SENTENCES AND REPLACE WITH: Kennedy Brook may either contribute to, or receive discharge from the shal- low water at the site, depending on water table conditions. The average elevation of the water table is about 100.6 feet, though it may range up to 109 feet or more in high river flow conditions. Kennedy Brook varies in
	elevation from less than 105 feet MSL at Highway 5 to less than 100 feet at the river.
3-19	4th paragraph, 4th sentence: CHANGE TO READ: Although under average flow conditions Kennedy Brook is probably above the water table and therefore discharges to the aquifer, there is
	6th paragraph, 2nd line: CHANGE:plant, TO:coal storage
	6th paragraph, 6th line: AFTER:within the, INSERT:coal pile
3 - 3 2	Table 3-13, Section A: UNDER: Springfield, cannot be classified, ADD: X
	Table 3-13, Section A: UNDER: Springfield, does not meet Primary Standards, DELETE: X
	Table 3-13, Section A: UNDER: Chicopee, cannot be classified, DELETE: X
	Table 3-13, Section A: UNDER: Chicopee, Does not meet Primary Standards, ADD: X
3 - 34	5th paragraph, 3rd line: CHANGE:Springfield, TO:Chicopee
3-37	Table 3-15: CHANGE: Numver lifted over, TO: Number lifted over
3-38	Section 3.4.3, second paragraph: DELETE: 3rd, 4th AND 5th sentences. REPLACE WITH: Several substantial populations of the Shortnose Sturgeon (SNS) exist in lakes and rivers along the eastern United States and Canada. These populations may be classified as very healthy (i.e., reproducing) or marginal (low reproductive capacity) due to poor habitat and poor water quality. In the St. John River, New Brunswick, Canada there is an estimated population of 18,000 reproducing SNS; other rivers where large populations exist include the Kennebec (12,000) and Hudson (13,000-30,000). Marginal populations of the SNS exist in the Altamaha (Georgia), Delaware, and Con- necticut Rivers. In addition, a population was recently discovered in Lake Marion, South Carolina.
	The Connecticut River does not contain one of the healthy populations of the SNS. Old records (1940s and '50s) indicated that there was a substantial population in the Connecticut River but now it is at low-level (350-550 adults) and reproductive capacity is low. Although it is considered to be a low-level population, it is a stable one (Dadswell, M., and Taubert, B., personal communication, 1983).
3 - 45	1st line: CHANGE LINE TO READ:50-car unit train about every 3.5 days

SECTION Page	Location (paragraph, including fragments, and line in paragraph)
CHAPTER 4.0	
4 - 4	2nd paragraph, 9th line: CHANGE:rainfall, TO:evaporation
	3rd paragraph, 3rd line: AFTER:for the parameters, ADD: Goal bei purchased for Mt. Tom is to be washed and should have significantly reducash contaminant levels.
4 - 6	3rd paragraph, 2nd sentence: DELETE ENTIRE 2nd SENTENCE AND ADD: Th upstream storage is being provided in order to comply with the Commonweal of Massachusetts' Floodplain Management Policy and the DEQE Final Decisi on Site Assignment, dated September 16, 1982.
	6th paragraph, 3rd line: CHANGE: Figure 2-1, TO:Figure 4-1
4 - 7	Last paragraph, 2nd line: DELETE:cadmium,
4 - 8	Table 4-3, Cadmium columns 4, 5, 6, 7, 8, 9, CHANGE NUMBERS RESPECTIVELY READ:0.0035, 0.0000035, 0.000000005, 0.0000005, 0.00000000 0.000000000007
4-11	3rd paragraph, 7th line: CHANGE: (NUSCO, 1982c). TO: (NUSCO, 1982b).
	Ground Water Monitoring, 1st bullet, 3rd line: CHANGE LINE TO REA wells exhibit a range of concentrations essentially similar to backgrou levels.
	Ground Water Monitoring, end of 2nd bullet: ADD: From Figure 4-1, it g be noted that these increases have occurred both up gradient (OW-6 a OW-19) and down gradient.
	Ground Water Monitoring, last paragraph, 7th line: DELETE: monthly
4-11	Summary, last paragraph, 2nd line: CHANGE: casual, TO: causal
4 - 1 3	2nd paragraph, 3rd sentence: CHANGE:attentuation, TO:attenuation
4 - 2 4	Bottom paragraph, 5th line: AFTER:more fish, CHANGE SENTENCE READ: will be impinged on the intake screen and more fish larvae will entrained into the cooling system.
4 - 2 5	2nd paragraph, 2nd line: CHANGE:800,000, TO:1,200,000
	5th paragraph, last sentence: DELETE ENTIRE LAST SENTENCE.
4 - 27	Transportation, 1st paragraph, 3rd line: CHANGE:7,000, To5,000, AND:5 days, TO:3.5 days.
	Transportation, 2nd paragraph, 2nd line: AFTER:for sale, CHAN SENTENCE TO READ:, reuse, or disposal
	Transportation, 2nd paragraph, 4th line: CHANGE:61 loads, To 40-45 loads
4 - 3 0	Capital Costs, lst paragraph, 7th line: DELETE ENTIRE SENTENCE BEGINNI WITHHowever AND ADD: Upon recovery of the conversion cost estimated to take about three years, the full fuel savings will be passed to the customer.
	<u>Capital Costs</u> , lst paragraph, last line: CHANGE LINE TO READ conversion cost is estimated to be \$40 million.
	Capital Costs, 3rd paragraph, 5th line: CHANGE:\$35 million, 7 \$40 million
	Caital Costs, 3rd paragraph, last sentence: DELETE ENTIRE LAST SENTENCE

SECTION Page	Location (paragraph, including frag	ments, and line in paragraph)	
4 - 3 1	Table 4-14: CHANGE TABLE TO READ:		
	Coal Handling Equipment	\$10,330	
	Boiler Modifications	3,700	
	Precipitators	13,340	
	Ash Handling Equipment	1,490	
	Ash Disposal/Water Treatment Facility	5,940	
	New Dry Fly Ash Handling System	3,000	
	Misc. General Contractor Support.	2,000	
	Total	\$40,000	
	1st paragraph: DELETE ENTIRE 1st PARAGRAPH AND ADD: These costs are esti mates which were presented to the Massachusetts Department of Public Utili ties on November 19, 1982 (Docket No. 965-B).		
	last paragraph line 2: CHANGE TO	PFAD: operation: to date 2	

last paragraph, line 2: CHANGE TO READ: ...operation; to date 28 additional operational personnel have been required.

4-34 Table 4-17: DELETE ENTIRE TABLE 4-17.

3.0 PUBLIC AND AGENCY PARTICIPATION

The Draft Environmental Impact Statement (DEIS) was published in October 1982. Federal Register (47 FR 50337) dated November 5, 1982, announced the availability of DEIS and the proposed issuance of a Notice of Effectiveness for the Mt. Tom genera station. The DEIS was provided to numerous Federal, state, and local agencies, as we concerned individuals, interest groups, and public officials.

While the comment period on the DEIS remained open through December 20, 1982, let received after that date, but prior to the publication of the FEIS, are included in section of this Final EIS. The designations in the right hand margin of the 11 let received identify those specific comments for which responses have been develo Responses are provided adjacent to each letter.

DOE has not held public hearings for the proposed conversion since the public sco meeting held in Holyoke, Massachusetts, December 4, 1980. EPA, however, convened a puhearing on NUSCO's DCO application on August 25, 1981, at which time the public par pated in discussion of the major issues related to the conversion.

Comments were received from the following agencies, groups and individuals:

Commentor	
National Science Foundation	13
Department of Agriculture, Soil Conservation Service	14
Massachusetts Historical Commission	15
Nuclear Regulatory Commission	16
Department of Health and Human Services	17
Northeast Utilities	18
Department of Commerce, National Oceanic and Atmospheric Administration	41
Environmental Protection Agency, Region I	48
Department of the Army, Corps of Engineers	5 0
Department of the Interior	52
Massachusetts Executive Office of Environmental Affairs	53

NATIONAL SCIENCE FOUNDATION

WASHINGTON, D.C. 20550 November 12, 1982



OFFICE OF THE ABSISTANT DIRECTOR FOR ASTRONOMICAL. ATMOSPHERIC. EARTH. AND OCEAN SCIENCES

Ms. Anne Randolph Office of Fuels Programs Fuels Conversion Division Economic Regulatory Administration 1000 Independence Ave., SW Room GA-093 Washington, DC 20585

Dear Ms. Randolph:

The National Science Foundation has no comments on the DEIS Conversion 7 to Coal Holyoke Water Power Company, Mt. Tom Generating Station, Unit 1, 🙎 Holyoke, Hampden County, Massachusetts.

Sincerely,

Barlien Onestak Barbara E. Onestak

Acting Chairman Committee on Environmental Matters

National Science Foundation

NSF-1 No response required.

1

United States Department of Agriculture

Conservation Service 451 West Street Amherst, Massachusetts 01002 Tel. (413) 256-0441 U.S. Department of Agriculture, Soil Conservation Service

USDA-1 No response required.

December 3, 1982

Hs. Anne Randolph U. S. Dept. of Energy Economic Regulatory Administration Division of Fuels Conversion 1000 Independence Avenue, S.W. Room GA-093 Washington, D. C. 20585

Dear Ms. Randolph:

Subject: ECOL SCI - Draft Environmental Impact Statement - Conversion to Coal, Holyoke Water Power Company, Mt. Tom Generating Station Unit 1, Holyoke, Massachusetts

USDA-1

I have no comments to make on the subject document. Our opportunity to review and comment is appreciated.

Sincerely, 2 ධ SHERMAN L. LEWIS

State Conservationist

cc: R. Lewis, District Conservationist, SCS, Hadley Peter Meyers, Chief, SCS, NHQ, Washington, D. C. Arthur Holland, Director, NTC, SCS, Bromall, PA

The Soil Conservation Service is an agency of the Department of Agriculture



COMMONWEALTH OF MASSACHUSETTS $\tt MHC-1$ Office of the Secretary of State

MASSACHUSETTS HISTORICAL COMMISSION 294 Washington Street Boston, Massachusetts 02108 617-727-8470

MICHAEL JOSEPH CONNOLLY Secretary of State

December 7, 1982

Paul de Brigard Land Planning, Transmission Engineering and Construction Northeast Utilities P.O. Box 270 Hartford, CT 01601

RE: Mt. Tom Coal Conversion DEIS, DOE/EIS-0092-D

Dear Mr. de Brigard:

Staff of the Massachusetts Historical Commission have reviewed the Draft Environmental Impact Statement for the Mt. Tom Coal Conversion Project in Holyoke.

The DEIS indicates that no further archaeological investigation was conducted for the project in addition to the initial reconnaissance survey which was completed by the Public Archaeology Survey Team, Inc. The MiC has not yet received a final report for this survey; the report is required in compliance with Massachusetts General Laws Chapter 9, Section 27C (950CNR 70.14). The MHC had previously requested that a final archaeological survey report be submitted if further intensive archaeological investigation was not undertaken (cf. MHC letter dated October 2, 1981).

Please submit the full archaeological report as quickly as possible. The report should meet the standards set forth in 950CAR 70.14.

Thank you for your attention to this matter.

Sincerely,

Valerie Talmage O Acting State Historic Preservation Officer Acting Executive Director Massachusetts Historical Commission

xc: Anne Randolph, DOE Kevin McBride, PAST

VT/1k

Massachusetts Historical Commission

The final archaeological report on the Mt. Tom site is included in Chapter 6.0 of this FEIS. The only cultural resources of any significance found were two previously identified prehistoric sites along the river bank. Project activities will have no effect on these sites. Also, since no additional waste disposal sites will be developed, cultural deposits which may exist below the depth of the survey investigations will not be disturbed.

A copy of the final archaeological report and a site plan which identifies active and inactive ash basins and the depth of subsurface disturbance permitted by the Massachusetts State Historic Preservation Office (SHPO) for various portions of the site have been submitted to the SHPO.



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

DEC 0 8 1982

Ms. Anne Randolph U.S. Department of Energy Economic Regulatory Administration 1000 Independence Avenue, SW. #GA-093 Washington, DC 20585

Dear Ms. Randolph:

This is in response to your request for comments on the Draft Environmental Impact Statement for Conversion to Coal of Holyoke Water Power Company's Mt. Tom Generating Station (DOE/EIS-0092-D, October 1982).

We have reviewed the statement and determined that the proposed action has no significant radiological health and safety impact, nor will it adversely affect any activities subject to regulation by the Nuclear Regulatory Commission.

Since we made no substantive comments, you need not send us the Final Environmental Statement when issued.

Thank you for providing us with the opportunity to review this Draft Environmental Statement.

Sincerely,

em.

Daniel R. Muller, Assistant Director for Environmental Technology Division of Engineering Office of Nuclear Reactor Regulation

NRC-1

Nuclear Regulatory Commission

NRC-1 No response required.

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DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control Atlanta GA 30333 (404) 452-4095 December 14, 1982

CDC-1

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Ms. Anne Randolph Office of Fuels Programs Fuels Conversion Division Economic Regulatory Administration 1000 Independence Avenue, S.W. Room GA-093 Washington, D.C. 20585

Dear Ms. Randolph:

We have reviewed the Draft Environmental Impact Statement (EIS) for Conversion to Coal, Holyoke Water Power Company, Mt. Tom Generating Station, Holyoke, Hampden County, Massachusetts. We are responding on behalf of the Public Health Service.

The Draft EIS does not discuss mosquito or other vector populations. The Final EIS should address the potential mosquito problems that may occur from the various wastewater and fly ash holding basins. The potential health threats to workers, proposed control measures that may be used, kinds and volumes of pesticides, and enticipated application procedures should be described.

The EIS mentions the possible conversion of some farmland into an ash disposal site. The Final EIS should discuss whether or not this farmland is considered as prime farmland. If so, does the project conform to the joint memorandum of August 30, 1976, from the Council on Environmental Quality and the Department of Agriculture concerning prime and unique farmland?

The Draft EIS states that a permanent wastewater treatment system is to be constructed and put into operation during 1982 to replace the temporary treatment system used between the conversion to coal and the completion of permanent facilities. The Final EIS should address the status of this wastewater treatment system.

Thank you for the opportunity to review this Draft EIS. We would appreciate receiving a copy of the final document when it becomes available. If you should have any questions about our comments, please call Mr. Lee Tate of my staff at FTS 236-6649.

Sincerely yours,

- 5 Feli-

Frank S. Lisella, Ph.D. Chief, Environmental Affairs Group Environmental Health Services Division Center for Environmental Health Department of Health & Human Services

CDC - 1Northeast Utilities' experience at Mt. Tom and other Northeast Utilities' generating stations indicates that no mosquito or other vector problems should occur with the newly developed wastewater The only insect vectors of and ash basins. potential concern in Massachusetts are one or more species of mosquito that transmit Eastern equine encephalomyelitis. The most likely species of mosquito is Coquilletidia (=Mansonia) perturbans, an epizootic epidemiological vector, although there is evidence that the virus may also be enzootic in some species of Culex. According to a health official in Massachusetts public (Dr. Joseph Reardon, personal communication) this virus does not show up in the human population every year and has never been reported from the Holyoke area. The occurrence of the disease in the eastern part of the state seems to be associated with the prevalence of swamps 20 miles west of Boston. Two cases were discovered in 1982, the first incidence since 1975. Therefore, it would appear that occurrence of this disease is not likely in the project area.

> The City of Holyoke has no ordinance for control of mosquitos. If mosquitos do begin breeding in the various water storage basins on the site, such as wastewater or ash ponds, and a significant problem should develop, the Holyoke Board of Health would contact DEQE about possible remedies (Cordes, personal communication). Suitable mosquito control agents and application procedures approved by the U.S. Environmental Protection Agency or other appropriate state or Federal agencies would be used. Special precautions would be taken to ensure that any pesticides used would be applied in a manner not to endanger human health.

- CDC-2 Approximately 15 acres of prime farmland was being considered for use as an ash disposal site on the property. However, HWP now plans to dispose of all ash offsite. The project will not affect this farmland.
- CDC-3 The permanent wastewater treatment system was completed and placed into full operation by March 25, 1983. The delay in the original schedule was caused by a redesign and expansion of the facility which was approved by both EPA and DEQE.

17



General Offices . Selden Street, Berlin, Connecticut

P.O. BOX 270 HARTFORD, CONNECTICUT 06141-0270 (203) 666-6911

December 17, 1982

C00174

Ms. Anne Randolph Office of Fuels Programs Fuels Conversion Division Economic Regulatory Administration 1000 Independence Avenue, S. W. Room GA-093 Washington, D. C. 20585

References: Draft Environmental Impact Statement Conversion to Coal, Holyoke Water Power Company, Mt. Tom Generating Station Unit 1 Holyoke, Hampden County, Massachusetts, dated October, 1982.

> Mt. Tom Station Comments on Draft Environmental Impact Statement

Dear Ms. Randolph:

Northeast Utilities Service Company (NUSCO), on behalf of Holyoke Water Power Company (HWP), offers the attached comments on the Draft Environmental Impact Statement (DEIS) for HWP's Mt. Tom Generating Station. Comments are divided into two areas: <u>Summary Comments</u> which describe resolutions of the unresolved environmental issues identified in the DEIS and <u>Specific Report Comments</u> which address specific EIS section discussions.

If you should have any questions regarding these comments please contact Mr. Richard M. Meister, Fossil and Hydroelectric Licensing at (203) 666-6911, extension 3740.

Very truly yours,

NORTHEAST UTILITIES SERVICE COMPANY As Agent for Holyoke Water Power Company

W.G.Counsil Senior Vice President

COMMENTS ON MT. TOM STATION

DRAFT ENVIRONMENTAL IMPACT STATEMENT

Northeast Utilities Service Company P.O. Box 270 Hartford, Connecticut 06101

December 17, 1982

-1-

ENCLOSURE 1

Mt. Tom Station Comments on Draft Environmental Impact Statement

I. SUMMARY COMMENTS

Encroachment on the 100-year Floodplain of the Connecticut River

Northeast Utilities Service Company (NUSCO) and Holyoke Water Power Company (HWP) studies show that, even when all site construction activities are taken into account, there would be no measureable increase in flooding. In addition, by providing 300 acre-feet of compensatory storage at the Northfield Mountain Pumped Storage Project, HWP will be in compliance with the Commonwealth's Floodplain Management Policy and the Massachusetts Department of Environmental Quality Engineering's (DEQE) Decision on Site Assignment, dated September 16, 1982. Further, no additional loss of floodplain storage is anticipated as all fly ash will be disposed of off-site after March 1, 1983. (See discussion of Sale or Off-site Disposal of Fly Ash).

Lining of On-Site Basins

The Company has reacted to the possible need for future lining of the on-site basins by continuing to collect and analyze hydrogeologic data as required by the Memorandum of Understanding (MOU) in order to ensure that no environmental hazard results from continued use of the wet-sluice ash systems. However, a dry fly ash handling system to promote ash reuse as a construction material or for ultimate off-site disposal is being developed (see discussion of Sale or Off-Site Disposal of Fly Ash below). Since the interim dry fly ash handling system will soon be in operation, the quantity of ash presently being sluiced will be minimized.

In addition, the Company has provided an 80 mil membrane liner in the Special Wastewater Basin. In this manner, the potential for groundwater contamination is minimized for high volume wastewaters resulting from fireside washes, denenical cleanings, and coal pile run-off.

In summary, the HWP believes that all necessary actions have been initiated to ensure that current station operations will not adversely impact the existing groundwater quality. Since the wet sluice fly ash system will be replaced with a dry system, no liner will be required for the south fly ash basin.

Archaeological Studies

HWP has committed to a new dry ash handling system to allow marketing and/or off-site disposal of fly ash. (See discussion below on Sale or Off-site Disposal of Ash). Therefore, additional use of the area south of Kennedy Brook for fly ash disposal is not anticipated and the archaeological potential of this area is no longer an issue. Additional archaeological surface testing was carried out in this

Northeast Utilities

NU-1 HWP has committed to offsite disposal of coal ash. with priority given to sale of marketable fly ash for use as a concrete admixture. On January 12, 1983, a refurbished dry fly ash collection system was placed into operation for removal of approximately 95 percent of the fly ash for offsite disposal. This interim system utilizes a Hydroveyor exhauster to transport ash. Approximately one million gallons per day of water is needed to operate the system and approximately 5 percent ash carry-over (5 tons per day) will continue to be discharged to the fly ash basin during most of 1983. By December 31, 1983, a new dry fly-ash system (mechanical vacuum type) will be installed and operational, eliminating the need for additional fly ash storage basins and terminating the use, under normal conditions, of the existing basin.

> In addition to the relatively small amount of ash carried in the refurbished fly ash system water, NUSCO believes that temporary storage of fly ash should be allowed in the existing fly ash basin after March 1, 1983 under the following conditions: (1) limited emergency wet ash sluicing and dry ash storage in the event of a failure of the interim or final dry fly ash systems or if fly ash cannot be hauled offsite for reasons of a labor union strike, landfill owner defaults, etc.; and (2) wet sluicing of oil ash, which would foul the coal ash handling system, during extended oilfired startup and operation. NUSCO and DEQE will work out the details of such an agreement in the Final Site Assignment Decision.

> Bottom ash would be collected alternately in one of two existing onsite basins for periods of up to two years. The second basin would be used for collection while the first is dredged out and the bottom ash disposed in an approved offsite landfill.

> As a result of these ash disposal measures, there will be no loss of floodplain storage beyond the 103-acre-feet described in the DEIS.

NU-2 HWP discontinued wet slucing of fly ash as of

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and revealed no additional archaeological sites in the farmland south of the existing fly ash deposits. Evidence of the known sites is limited to the river's edge and the two ruins identified on that portion of the site have been determined to have no historical significance.

Sale or Off-Site Disposal of Fly Ash

Bottom ash will continue to be wet sluiced to existing basins on-site for the life of the station for storage. Periodically, the bottom ash basins will be cleaned out and the bottom ash disposed off-site at a DEQE approved landfill, in accordance with DEQE guidelines and regulations.

Fly ash is currently being wet-sluiced to an existing fly ash basin on-site. Results of the hydrogeological study to date indicate that there is no adverse surface water or groundwater impact from wet sluicing either bottom or fly ash on-site. However, HWP expects to cease wet-sluicing fly ash, except in emergencies, after March 1, 1983.

An existing dry fly ash silo has been refurbished to aid in the off-site removal of dry (conditioned) fly ash. This existing ash removal system will necessitate discharging to the south fly ash basin approximately 950,000 gpd of water with about 5 percent ash carry-over. This water is required by the existing system's hydroexhauster to create a vacuum which pulls ash from the ash hoppers on the precipitator, economizer, and air pre-heater.

A purchase order has been issued for a new dry fly ash system scheduled for operation in December, 1983. This new system will not require the use of water to create a vacuum. All water discharges to the south fly ash basin will cease when the new system begins service, except in emergency situations due to equipment failure, which will require wet sluicing of fly ash to continue station operation.

Dry conditioned fly ash will be disposed of directly off-site to a DEQE approved landfill no later than March 1, 1983. The landfill will comply with all DEQE guidelines and regulations.

Marketing studies have been performed for the use of fly ash, and many short and long-range potential markets for ash have been identified. In fact, 840 tons of dry fly ash from the Mt. Tom Station have already been sold this fall for use as a concrete admixture.

The new dry fly ash system includes two silos which will allow the separation of high quality fly ash for marketing and low quality fly ash for disposal directly off-site.

Potential markets for both dry and wet conditioned fly ash include, but are not limited to, use of fly ash as: concrete admixtures, lightweight aggregate, fill and base materials, structural products, magnetite recovery, metals recovery and mineral wool.

ash will continue to be collected and stored onsite temporarily as described above.

NU-3 The 80-mil liner was installed in October 1982.

NU-4 The temporary increase in sluice water flow rate (from 850,000 gpd to as much as 1,200,000) is expected to continue for a period of approximately 11 months beginning January 12, 1983. This water will carry only 5 percent of the total fly ash formerly transported in the wet-sluicing system and consequently represents much less potential for pollution of the Connecticut River through discharge of treated effluent or through percolation into the ground water. -3-

Providing fly ash to ready-mix concrete firms and ash brokers as a partial replacement for portland cement is a market that can be developed and sustained providing the the ash that is produced has characteristics consistent with ASTM standards.

In addition, HWP has and will continue to participate in the development of coal ash utilization technology with organizations such as EPRI. This will assure that HWP arm NUSCO are aware of developments as they occur and will allow evaluate of these growing technologies for purposes of expanding markets for Mt. Tom fiy ash.

Surface Water and Groundwater Quality Issues

As indicated in the water quality discussions in Sections 3, 4 and 5 of the DEIS, the basic water quality issues have been resolved. An extensive hydrogeologic study effort has established the characteristics of both surface water and groundwater in the area. Sources of water quality degradation resulting from past coal operations at the site have been defined. Preventive measures have been taken to minimize the effect of present coal operations on water quality. These measures include lining the coal storage area as well as the special wastewater basin and implementing water treatment practices prior to discharging water into the natural surroundings. An extensive monitoring program has been developed to provide an early warning of groundwater contamination.

IJ. SPECIFIC COMMENTS

Underlined words indicate suggested insertions.

 PAGE ii, Fourth Paragraph:
 The last sentence should be revised to reflect
 Paragraph:

 that coal deliveries are made to the station by a 50-car unit train, twice
 Paragraph:
 Paragraph:

 a week. The same comment applies to page 1-7, first paragraph, the top of page 3-45, and Section 4.2.5.3.
 Paragraph:
 Paragraph:

Third paragraph from Bottom: Change the second and third sentences to read.

"This quantity was reduced to 0.35 lb/10⁶ BTU about 8 months after initial coal burning (by means of upgrading the present precipitator and installing a flue gas conditioning system) is completed and installed. By February 15, 1984 or 45 days after installation of the new electrostatic precipitator PM emissions"

PAGE iii, First Paragraph: Insert the following sentence after the first sentence,

HWP estimates that 103 acre feet of flood storage volume would be displaced as a result of coal conversion construction activity.

1--7

- NU-5 This comment has been incorporated into the Errata, Section 2.0.
- NU-6 This comment has been incorporated into the Errata, Section 2.0.
- NU-7 This comment has been incorporated into the Errata. Section 2.0.

22

(Change the last sentence to read:	
	"On-site fly ash disposal is permitted through March 1, 1983."	0-8
1	Fuels Paragraph, Second Sentence: Insert the following:	ž
1	"and would introduce additional environmental concerns associated with FGD sludge disposal; and"	0-UN
i	<u>Transportation paragraph</u> : Delete the first sentence and add the following closing sentence.	
, 1	"Therefore, rail delivery is the only feasible means of transporting coal to the station."	NU-10
PAGES I	1-3, 2-3, 2-4: Tense of verbs should be changed to reflect that the DEIS was issued after conversion to coal began.	II-UN
PAGE 1-	-5, Table 1-2: Change title to "Design Data at Full Load". These data are not operational parameters.	NU-12
<u>PAGE I-</u>	7. Fourth Paragraph: The station's net proven capability is 148 MW (winter). Also change page 1-5, Table 1-2 footnote.	4 NU-13
S	Seventh Paragraph: The fourth sentence should be changed to reflect pH limits contained in the station's discharge to ground permit.	NU-1
" <u>t</u>	"Treatment must maintain the sedimentation basin <u>pH in the range of 6</u> to 9."	NU-15
<u>1</u>	Ninth Paragraph, third line: The word "electrostaic" should read 'electrostatic."	NU-16
PAGE I- I I	8. Section 1.6: Table 1-3 has been updated and is attached as Exhibit No. 1. The section should include discussion of Massachusetts Environmental Policy Act (MEPA) review which is a major state action.	NU-17
S	Second Paragraph: The paragraph implies that coal pile run-off would	

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Second Paragraph: The paragraph implies that coal pile run-off would be directed to an unlined basin and would require pre-treatment. In fact the run-off is directed to a lined coal pile run-off basin. The special wastewater basin is now lined and treatment of coal pile run-off is not necessary before or after it is placed into either basin. Once the new Wastewater Treatment Facility is in place, coal pile run-off may be pumped directly to the equalization basin should it become necessary to remove water from its lined collection basin.

- NU-8 This comment has been incorporated into the Errata, Section 2.0.
- NU-9 This comment has been incorporated into the Errata, Section 2.0.
- NU-10 This comment has been incorporated into the Errata, Section 2.0.
- NU-11 This comment has been incorporated into the Errata, Section 2.0.
- NU-12 This comment has been incorporated into the Errata, Section 2.0.
- NU-13 This comment has been incorporated into the Errata, Section 2.0.
- NU-14 This comment has been incorporated into the Errata, Section 2.0.
- NU-15 This comment has been incorporated into the Errata, Section 2.0.
- NU-16 This comment has been incorporated into the Errata, Section 2.0.
- NU-17 Table 1-3, updated in chronological order of Permits for Phase I and Phase II, is provided at the end of the NUSCO responses (corresponding to NUSCO Exhibit No. 1). The MEPA review process is discussed below.

Under MEPA, the Massachusetts Executive Office of Environmental Affairs (EOEA) requires an environmental review of the proposed conversion which is similar to that required on a Federal level by the National Environmental Policy Act (NEPA) of 1969. Often a NEPA Environmental Impact Statement (EIS) evaluating a proposed action within the state can satisfy the Environmental Impact Report (EIR) requirements of MEPA. In the case of Mt. Tom, EOEA determined that a separate EIR must be prepared. NUSCO published a draft EIR on July 31, 1981 and a Final EIR, which responded to public and agency comments, on September 18, 1981. EOEA issued a MEPA Certificate on September 22, 1981.

NU-18 This comment has been incorporated into the Errata, Section 2.0.

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Section 1.6.1: The flow rate for Discharge Serial No. 010, Fly Ash Settling Basin, should be 1.2 MGD not 0.11 MGD.

PAGE 1-9, Section 1.6.3, Second Paragraph: Insert the following sentence after the fourth sentence.

NU-20 "Once the capital cost of the conversion equipment is recovered, estimated to be about 3 years, the full fuel savings will then be passed on to the consumers."

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NU-23

The term "low-sulfur" should be ş PAGE 2-2, Section 2.3., First Paragraph: defined. 2 Section 2.3.1.1: The third sentence should indicate that the sulfur -N

content of 1.21 lbs/106 BTU is a maximum sulfur-in-fuel requirement.

Table 2-1: Ash Content under the heading "Project Coal" should be "9.0% maximum (dry),"

24 PAGE 2-3, First Paragraph: Pulverizers were overhauled with no increase in 'n capacity, not upgraded.

Section 2.3.1.3: This section is essentially correct in that HWP's preferred alternative is to market fly ash or dispose of it off-site. ₹ Commitment to a new dry ash handling system illustrates HWP's intent to remove all fly ash off-site. (See Summary Comments regarding Sale or Off-site Disposal of Flyash).

26 Section 2.3.1.3, Second Paragraph, Second Line: The word "bottom"is ⋛ spelled incorrectly.

Section 2.3.1.3 Second Paragraph: Insert the following phrase at the end of the last sentence:

".... but <u>HWP's</u> preferred alternative is to sell the fly ash for reuse, NU-27 depending on the characteristics of the ash and the potential markets or to dispose of it off-site at a dedicated landfill area."

Section 2.71, 3.3 and 5.1.1: These sections, which discuss air quality, are generally complete and consistent with conclusions reached by NUSCO. There is, however, a lack of identification and emphasis of the very ž conservative assumptions inherent in the analysis. It is important that a reader unfamiliar with the Mt. Tom facility be made aware of the safety factors involved.

The CHESS report results contained in Appendix A has been widely questioned because its conclusions differ sharply from those of other investigations.

- NU-19 This comment has been incorporated into the Errata. Section 2.0.
- NU-20 This comment has been incorporated into the Errata, Section 2.0.
- NU-21 This comment has been incorporated into the Errata. Section 2.0.
- NU-22 This comment has been incorporated into the Errata, Section 2.0.
- NU-23 This comment has been incorporated into the Errata, Section 2.0.
- NU-24 This comment has been incorporated into the Errata. Section 2.0.
- NU-25 HWP has committed to installation of a dry fly ash handling system and to ultimate offsite disposal of all coal ash.
- NU-26 This comment has been incorporated into the Errata. Section 2.0.
- NU-27 This comment has been incorporated into the Errata, Section 2.0.
- NU-28 The air quality analyses performed in support of the conversion to coal of the Mt. Tom generating station as described in the Draft EIS is considered to be generally conservative in nature. The predicted impacts associated with the increased emissions (where applicable) are based on conservative assumptions and modeling methodologies that are typically used in this type of application. The results of the modeling analyses presented in the Draft EIS are considered to be representative of possible upper bounds rather than average impacts on ambient air quality, and the results should be interpreted by the reader Rather than to list all of the accordingly. conservative assumptions here, it would be more appropriate for the reader to refer to the air quality impact analyses prepared by NUSCO and summarized in Appendix B of the DEIS, and to the Draft Northeast Regional Environmental Impact Statement prepared by DOE (October 1981).
- NU-29 Although the CHESS report has been questioned, its results have not been shown to be incorrect. This remains a somewhat controversial issue.

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PAGE 2-4, Second Paragraph: The treatment system described is for normal plant wastewater; therefore, the words "normal plant wastewater" should be deleted from the third sentence which describes special wastewater streams. The paragraph could add that the maintenance wastewater and coal pile run-off are collected separately in the special wastewater basin, but are treated in the same facility.

Fourth Paragraph: The last sentence is overstated. A more accurate statement is that HWP is "attempting to find" a market for fly ash produced at the station.

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Fourth Paragraph: Change 875,000 GPD to 1.2 MGD maximum fly ash transport.

Last Paragraph: To be more accurate, change "1.5 percent" to "1.21 pounds of sulfur per million BTU heat input".

- PAGE 2-8, Last Paragraph: This section should be revised given the Department of Environmental Quality Engineering's Final Decision on Site Assignment, dated September 16, 1982, prohibiting disposal of fly ash in the existing south fly ash basin after March 1, 1983. HWP is actively seeking a dedicated landfill to receive fly ash which is not marketable.
- PAGE 2-16, Last Paragraph: Enclosed is a copy of the "Mt. Tom Trace Element Study" which is a report on trace elements, radionuclides and organic compounds actually measured in the Mt. Tom Station stack after conversion to coal. The study results indicate that there is no significant increase in health risk attributable to emissions of trace elements or radionuclides. This section should be revised accordingly.
- PAGE 3-7, Section 3.2: Analyses of groundwater conditions indicate that no significant problems are being introduced as a result of coal burning, that adverse effects resulting from the original storage of coal prior to conversion to oil in 1970 are decreasing with time, and that actions taken will ensure that all water flows are safeguarded. Examples of these actions include lining the coal storage area for collecting coal pile run-off and leachate and special wastewaters, treatment of discharge waters, monitoring water quality to assure that appropriate actions can be taken, and determining through considerable analyses the structure and hydrogeologic characteristics of the area.
- PAGES 3-11 and 3-12, Table 3-4: It appears unusual that there would only be one measurement for hardness from 1975 to 1980. Even more so, that it should show 0.00mg/l hardness. Calculations from Ca and Mg values gives about 32.5 mg/l mean hardness as CaCO3.

- NU-30 This comment has been incorporated into the Errata, Section 2.0.
- NU-31 This comment has been incorporated into the Errata, Section 2.0.
- NU-32 This comment has been incorporated into the Errata, Section 2.0.
- NU-33 This comment has been incorporated into the Errata, Section 2.0.
- NU-34 Offsite waste disposal is now the proposed action. Onsite waste disposal is the alternative. Section 2.5.3.1 is revised accordingly below.

2.5.3.1 Onsite Disposal

Onsite storage of ash is one alternative to offsite disposal. The utility originally elected this as the least cost and preferred alternative. However, there are numerous environmental disadvantages. As much as 44 acre-feet of 100-year floodplain storage would be required during the 20-year life of the project. The land available for storage contains 15 acres of prime farmland. Also, there is a potential for archaeological sites on the property in this area. Furthermore, such storage would raise additional questions about possible contamination of the ground water and the Connecticut River due to leachate or treated runoff. After much discussion, the DEQE, through their Final Decision on Site Assignment (September 16, 1982), prohibited disposal of fly ash in the existing south fly ash basin after March 1, 1983 and also prohibited disposal of any waste ash outside of existing ash basins. HWP has, therefore, committed to construction of a dry fly ash handling system (to be operational by December 31, 1983) and will dispose of any ash which cannot be sold offsite in a DEQE approved landfill.

NU-35 A trace element study was performed at the Mt. Tom station for Northeast Utilities by Environmental Research Group, Inc. in order to determine the composition of the source coal and its combustion products. The results of this study indicated that there will be no significant increase in health risk attributable to emissions of trace elements or radionuclides as a result of the conversion of the Mt. Tom generating station to coal. Cadmium - "Total cadmium" should have been measured and included in the table.

The table is missing footnotes.

PAGE 3-13, Table 3-5:	Errors are marked on the attached copy of Table 3-5.	NU-38
PAGE 3-14, Table 3-6:	Heading should read "ug/L".	NU-39
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- PAGE 3-17, Table 3-7: Footnote "b" appears incorrect, reference should be to the document not its notice of availability.
- PAGE 3-18, Fourth Paragraph: Kennedy Brook is above the groundwater level in adjacent areas most of the year; therefore, Kennedy Brook usually feeds the aquifer, rather than vice versa as stated in this section and in the fourth paragraph on page 3-19.
- PAGE 3-19, Section 3.2.2.2: Past coal handling activities in the 1960's provided many insights into probable water quality impacts that could arise as a result of the improper handling of coal or ash on the site. The only major impact that was noted in the hydrogeologic study prepared by Gibbs and Hill, was related to the old coal pile storage area in the northern aquifer (note that an old coal pile remnant was left on site for nearly 10 years) where groundwater was rendered acid as a result of runoff and leachate from the coal alone. A revision to paragraph 5, page 3-19 should reflect coal pile run-off effects only and not a general statement referring to all station operations. Mitigative measures have been taken to allow the groundwater to return to normal pH and the new coal pile storage area has been lined to prevent further contamination.

Groundwater quality in the vicinity of the old ash basins does not reflect any significant impacts to groundwater quality from past ash disposal practices. Although increases in iron, manganese and other metais were noted between up gradient values versus down gradient values, it would be difficult to attribute all of these increases to the ash disposal, as changes in the geology of the aquifer system under the site could also be held accountable. For example, a heavy clay formation, like that found in southern aquifer system, could easily account for increases in total disposal could. The first paragraph on page 3-21 should reflect this concept.

It should also be noted that the coal being purchased for Mt. Tom is a washed coal thereby significantly reducing ash levels compared to the past. Therefore, no adverse impacts to present site groundwater quality $ext{are expected as the result of on-site storage.}$

- NU-36 A draft of the final hydrogeologic report for the Mt. Tom generating station will be available in the spring of 1983. The report will address the potential for contamination of ground and surface water resources and the possible need for future monitoring.
- NU-37 The comment is acknowledged. Calculated hardness, based on calcium and magnesium data, is indeed approximately 32.5 mg/l.
- NU-38 This comment has been incorporated into the Errata, Section 2.0.
- NU-39 This comment has been incorporated into the Errata, Section 2.0.
- NU-40 The footnote reference is correct as given. The notice of availability also gives the recommended water quality standards.
- NU-41 The elevation of Kennedy Brook varies from less than 105 feet MSL near Highway 5 to less than 100 feet MSL at the Connecticut River. The water table averages approximately 100 feet MSL during average river flow conditions, though it has been observed to rise as high as 109 feet. It appears as though Kennedy Brook feeds the aquifer during most of the year but may receive ground water discharge during high water table conditions. See the Errata, Section 2.0.
- NU-42 This comment has been incorporated into the Errata, Section 2.0.
- NU-43 Localized changes in ground water quality were detected in the vicinity of both the old coal storage area in the northern aquifer and in an area near the existing fly-ash ponds in the southern aquifer. The latter is characterized as a "weak" ground water pollution plume by Gibbs and Hill (1981) because pH values are all above 6.0 and maximum sulphate and TDS values are not high. However, iron concentrations detected at depths 70 to 80 feet below the water table are quite high. Although cation exchange has been shown to cause a degree of desorbtion for a number of chemical parameters measured in the ground water (not for iron, however), it is unlikely that this mechanism adequately explains the measured increases.
- NUL-44 A A Star that the real to be purphosed for Mt
- PAGE 3-36, Section 3.4.1.2: This section should be revised to reflect that the fish passage facilities at the Turners Falls Hydroelectric Project upstream of Mt. Tom became operational in 1980. Attached are two reports which discuss the operation of the facility, "Turners Falls Fish Passage Facilities, 1981 Annual Report of Operations" and "Turner's Falls Fish Passage Effectiveness Study", both dated November, 1982.
- PAGE 3-37, Table 3-15: In the third heading the work "numver" should read ♀ ⊇
- PAGE 3-38, Section 3.4.3: The first paragraph of this section which discusses shortnose sturgeon (SNS) states that, "Although it is not abundant anywhere along the east coast now, it probably used to be abundant from the Connecticut to the Potomac Rivers" and "The Holyoke pool of the Connecticut River contains one of the few known viable populations of this fish...."

SNS populations are known to exist along the entire eastern seacoast from South Carolina to Canada. Several of these populations are quite large. Estimates of the adult SNS populations have been prepared for the Hudson (13,000 \pm 30,000), Kennebec (12,000) and St. John (18,000 \pm 30%) Rivers. Other studies also indicate large populations of SNS likely to occur in the Winyah Bay estuary in South Carolina, Chesapeake Bay and in the Delaware River. It is inaccurate to state that SNS are not abundant anywhere along the east coast or that the Holyoke Pool contains one of the few known viable populations.

- PAGE 3-48, Section 3.5.6: The discussion of historical, cultural and archaeological resources appears to be accurate up to the time of the Massachusetts MEPA approval. Since that time, more archaeological surface testing was carried out in the area south of Kennedy Brook. These tests revealed no additional archaeological sites in farmland south of the existing fly ash deposits. Evidence of the known sites is limited to the river's edge. It was also determined that the two ruins on that portion of the site have no historic significance.
- PAGE 4-4, First Paragraph: The phrase "precipitation in the area exceeds rainfall", in line 9, should probably read "...exceeds evaporation."

Third Paragraph:Table 4-2 apparently assumes direct discharge ofIf y ash sluice water to the river without using the ash basin. Since the
ash basin is a treatment process, there is no discharge of untreated
water. Therefore, the discussion of untreated discharge is unrealistic
and should be deleted. The point should be made that treatment must
reduce iron to less than 1.0 mg/l, thus eliminating the only significant
increase in metal concentration.Ikewise be reduced in concentration.

NU-45 The Turner Falls Fish Passage Facility became operational in 1980. The facility consists of three ladders, and a study of the movement of American shad (Alosa sapidissima) was conducted in 1981 to determine the passage of these fish upstream through these ladders. The study concluded that, although few shad were observed to pass upstream, there is a reasonable probability that significant numbers will pass successfully after a stock native to the Turner or Vernon pools returns from the sea. Individual fish were observed to negotiate long series of pools in the ladder with no apparent difficulty; however, it is believed that sufficient biological drive was not present for large numbers of fish to pass successfully upstream. Another observation of the study was that shad responded positively to an increase in flow over the ladder.

> Internal observations of shad movement in the ladders will continue for several years to refine the operating methods. A more formal study may be initiated if the number of shad passed does not increase significantly by 1986.

- NU-46 This comment has been incorporated into the Errata, Section 2.0.
- NU-47 Large populations of the Shortnose Sturgeon do exist in several rivers along the Atlantic Coast, whereas the population in the Connecticut River is small, though stable. A modification to the DEIS is provided in the Errata, Section 2.0.
- NU-48 A copy of the final archaeology report is included in Section 6.0.
- NU-49 This comment has been incorporated into the Errata, Section 2.0.
- NU-50 The intent of Table 4-2 is to show the worst case effects of untreated discharge on Connecticut River water quality. The additional reduction due to treatment should also be illustrated for any specific substances which appear significant under the worst case assumptions. This analysis is revised below. Also, Table 4-2 is revised to reflect the release of the maximum daily flow rate of sluice water to the river.

TABLE 4-2

WORST CASE INCREASES IN POLLUTANT CONCENTRATIONS IN CONNECTICUT RIVER DUE TO UNTREATED ASH POND DISCHARGE^a

Parameter	Untreated Fly Ash Pond Discharge (mg/liter)	Increase Due to Untreated Discharge (ug/liter)	Ambien† Level (4g/liter)	EPA Drinking Water Standards (Hg/liter)
Arsenic	•38	0.14	0.43	50
8arium	.25	0.09	27.7	1,000
Cadmium	0.019	0.007	1.0	10
Chloride	6.5	2.4	-	250,000
Chramium	0.044	0.016	12.0	50
Соррег	0.91	0.34	4.4	1,000
Iron	211 ^b	78.4 ^b	610	300
Lead	0.33	0.122	12	50
Manganese	0.31	0.115	68.8	50
Selenium	0.12	0.044	0.00	10
Zinc	1.26	0.468	14.1	5,000

^aBased on average discharge levels of components in Table 4-1. Assumes untreated fly ash pond discharge of 1,200,000 gpd (1.86 cfs). No bottom ash discharge.

In order to illustrate the worst case impact on Connecticut River water quality, calculations were made of the incremental effect of accidentally discharging the fly ash pond sluice water into the river without treatment. Average pollutant concentrations were taken from Table 4-1. The maximum daily flow rate of 1.2 MGD (1.86 cfs) into the pond was assumed to be discharged; an average river flow of 5,000 cfs was used and uniform mixing was assumed. The results are given in Table 4-2. Also shown are the existing ambient levels and the EPA drinking water standards for these substances. Note that all ambient levels are well below drinking water standards except manganese and iron. The incremental increases in concentrations are negligibly small, even assuming untreated discharge, for every substance except The potential concentration increase of iron. 78 μ g/l for iron is significant relative to the drinking water standards. However, the drinking water standard for iron is based on taste effects; not public health.

The discussion states that "ambient concentration of iron is above EPA drinking water standands ... ", but does not emphasize that "ambient" is not an impact.

(Cont Treatment will produce a substantial reduction in "concentrations of pollutants...".

- NU-50 PAGE 4-5. Table 4-2: The parameter "Chlorine" should read "Chloride". Footnote "a" should read "800,000 MGD" instead of "800,000 cfs".
- PAGE 4-6, Third Paragraph: The second sentence is not entirely correct. Detailed modeling work performed indicates that there would be no NU-51 increase in flooding due to on-site ash disposal facilities or any other site work in the floodplain. The compensating storage being provided by HWP is in order to comply with the Commonwealth of Massachusetts Floodplain Management Policy and the DEQE Final Decision on Site Assignment, dated September 16, 1982.
 - Ż This section should be revised to reflect that the Section, 4.2.2.2: special wastewater basin is now lined. NU-53

The reference to Figure 2-1 should be corrected to Figure 4-1.

- PAGE 4-8, Table 4-3: The reported cadmium value for coal leachate is in Ż error. A correction was received from Chem Tech after the Gibbs and Hill report was issued. The correct value is 0.0035 mg/l. A revised table is attached.
- 55 PAGE 4-11, Second Paragraph: Reference "NUSCO, 1982C" should be "NUSCO, 1982B". ş 92 First Bullet: The last words, "essentially a similar range of concentrations", should read "... a range of concentrations essentially ≱ similar to background wells." 5
 - Second Bullet: It should be noted that the "...slight increase in Cd ... " applies to up gradient wells 6 and 19 as well as down gradient wells.

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Last Paragraph Under Groundwater Monitoring: The word "monthly" should be deleted. Only 11 wells are monitored on the monthly program as required by the Subsurface Discharge Permit. Monitoring of the 80 specified wells initially will be monthly but guarterly monitoring is anticipated for long-term maintainance.

All ash pond overflow is to be treated. The specific NPDES limitation for iron in the effluent is 1.0 mg/l (0.5 percent of that used in Table 4 - 2). The actual increase in ambient iron concentration due to discharge of treated ash pond overflow is only $0.37 \mu g/l$, which is 0.1 percent of the drinking water standard. Similar substantial reductions from the already small worst case concentration increases would occur for the other substances.

- NU-51 This comment has been incorporated into the Errata, Section 2.0.
- NU-52 The Special Wastewater Basin was provided with an 80 mil membrane liner in October 1982 so that all special wastewaters can be collected and retained in the basin without percolation into the ground water.
- NU-53 This comment has been incorporated into the Errata, Section 2.0.
- This comment has been incorporated into the Er-NU-54 rata, Section 2.0.
- NU-55 This comment has been incorporated into the Errata, Section 2.0.
- NU-56 This comment has been incorporated into the Errata, Section 2.0.
- NU-57 This comment has been incorporated into the Errata. Section 2.0.
- NU-58 This comment has been incorporated into the Errata. Section 2.0.

PAGE 4-7, Last Paragraph: Remove reference to cadmium as being above Drinking Water Standards. See corrected Table 4-3 attached.

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Last Paragraph on Page: The word "casual" on the second line should read "causal".	NU-59
PAGE 4-13, Second Paragraph: The paragraph should indicate that the special wastewater basin is lined. "Attentuation" should read "attenuation".	NU-60
PAGE 4-24, Section 4.2.4.1: The third paragraph, line 6, states that fish larvae are entrained on impingement screens. Larvae are entrained in water drawn through the cooling system; larger fish are impinged on the screen.	NU-61
PAGE 4-25, Fifth Paragraph: Studies demonstrate that zinc and copper are synergistic only in strong mixtures of 2 to 5 toxic units. At the concentrations expected at Mt. Tom, the combined effect should be additive - not synergistic. (Reference: Sprague, J. B. and B. Ann Ramsay, 1965 and Lethal Levels of Mixed Copper Zinc Solutions for Juvenile Salmon, J. Fish, Res. Bd. Canada, 22(2):425-432).	NU-62
PAGE 4-26, Section 4.2.5.1: The last sentence in the first paragraph appears to be in contradiction with the previous sentence which indicates that "It is unlikely that many serious impacts to land use in the vicinity of the plant have occurred."	NU-63
PAGE 4-27, Section 4.2.5.3, Second Paragraph: Ash will be trucked off-site for sale, reuse or <u>disposal</u> and it is estimated that <u>40-45</u> truck loads per week would be required to accomplish this.	NU64
PAGE 4-30, Section 4.2.5.7, First Paragraph: Delete the 5th sentence beginning with the words, "However, the rates". Rates were not established so that conversion costs could be recovered in a 36 month time frame. This section should indicate that, upon recovery of conversion costs, estimated to be about three years, the full fuel savings will then be passed on to the consumer. The cost estimate for coal conversion has been revised from \$35 million to \$40 million (See revised Table 4-14 for details).	NU-65
Third Paragraph: Given the discussion above the last sentence, should be deleted.	NU-66

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- NU-59 This comment has been incorporated into the Errata, Section 2.0.
- NU-60 The Special Wastewater Basin is to be lined as indicated previously. The spelling correction is incorporated in to the Errata, Section 2.0.
- NU-61 This comment applies to page 4-25 instead of 4-24, and the correction has been incorporated into the Errata, Section 2.0.
- NU-62 We agree that, at the concentrations expected in the Connecticut River near the Mt. Tom generating station, the combined effect of copper and zinc will be additive rather than synergistic. This conclusion is supported by the results of Lloyd (1961) as well as by Sprague (1965). The text has been corrected in the Errata, Section 2.0.
- NU-63 The utility has committed to disposal of ash offsite at a DEQE-approved landfill (for any quantities of ash which cannot be sold for beneficial use). This revision to the proposed action avoids use of additional floodplain on the site and also avoids any impacts to prime farmland. HWP has contracted with J.F. Partyka and Sons, Inc. to remove Mt. Tom fly ash for disposal in two licensed landfills located in Chicopee and Granby, Massachusetts. Use of both landfills has been approved by DEQE and complies with DEQE regulations (310 CMR 19.00, "Disposal of Solid Waste By Sanitary Landfill"). These regulations include requirements for safe and sanitary management and disposal of solid wastes. HWP's plans also comply with DEQE's recently issued "Interim Policy Regarding Removal and Use of Fly Ash from the Mt. Tom Generating Station."
- NU-64 The proposed action is now offsite disposal of ash. The specific wording change is included in the Errata, Section 2.0.
- NU-65 This comment has been incorporated into the Errata, Section 2.0.
- NU-66 This comment has been incorporated into the Errata, Section 2.0.

PAGE 4-31, Table 4-14: The table should be revised as follows to reflect revised coal conversion costs.

Table 4-14 Mt. Tom Station <u>Coal Conversion Costs</u> (in thousands)

Conversion Costs

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Coal Handling Equipment	\$10,330	9-1
Boiler Modifications	3,900	N
Precipitator	13,340	
Ash Handling Equipment	1,490	
Ash Disposal/Water Treatment		
Facility	5,940	
New Dry Fly Ash Handling System	3,000	
Misc. General Contractor Support	2,000	
Total	\$40,000	

First Paragraph: Revise the paragraph to read, "These costs are estimates which were presented to the Massachusetts → Department of Public Utilities on November 19, 1982 (Docket No. 965-B)". The rest of that paragraph and Table 4-17 should be deleted.

Last Paragraph: Conversion to coal, to date, has resulted in 28 additional plant operating personnel.

- NU-67 This comment has been incorporated into the Errata, Section 2.0.
- NU-68 This comment has been incorporated into the Errata, Section 2.0.
- NU-69 This comment has been incorporated into the Errata, Section 2.0.

TABLE 3-5

WATER QUALITY SUM MARY COMNECTICUT RIVER AND KENNEDY BROOK

			51	ation No.										5	tatlar	Ho.				
Parameters	<u>1</u>	ž	3	1	<u>5</u>	6	1	1.00	High	Parameters	<u>Units</u>	1	1	1	4	5	2	1	Low	High
Atuntoum	s0.1	18.1	¢0.1	0.15	<0.1	(0.)	«O.J	(0.1	0.13	Alkal Inity	mg/1 CaCO,	32	32	32	32	32	56	42	17	14
Antimony	(0.1	FO.1	≤0.1	\$0.1	s0.1	(0.1	(0.1	¢0.1	£0.1											
Arsenic	0.0023	<.002	<. DO 2	.0023	.0045	<.002	<.002	0.002	0.0045	Chlorides	mg/1	12	12	12	12	12	44	36	12	44
Bartum	(0.1	(0,1	(0.1	<0.1	<0.1	<0.1	£0.1	(0.1	\$0.1											
Beryllium	(.005	<.005	s.003	s.003	4.005	<.003	6.005	C.005	s.003	Color	Unfés	7	10	12	3	6	5	5	5	12
Boron	0.95	1.7	1.73	8.0	1.25	<0.5	(0.5	<0.5	1.75											
Cadmium	. 0013	.0013	.0017	.0025	.0012	<.0010	6,0010	<.0010	0.0025	Fluorides	ng/t	.17	5 ,25	5 .16	5 .18	.14		ee, 1	.135	ون.
Calcium	9.4	30.2	10.1	9.4	9.2	17.5	14.0	9.2	17.5											
Chromium	5.02	\$.03	<.02	0.06	0.03	<.02	<.02	\$.02	0.05	Hitrotes	mg/1A	0.21	5 0.22	5 0.23	3 .20	5 0.22	. 25	.16	.16	.235
Cabelt	<.0\$	<.05	<.05	C.05	¢.05	¢.05	<.05	<.05	<.05		~									
Copper	\$. OI	0,02	.023	0.03	0.02	0.01	0.015	≤.01	0.03	PH	Units	7.4	7.4	7.4	7.45	7,6	7.6	7.3	7.3	7.6
[ron	0.15	0.205	0.31	0.22	0.28	1.22	0,39	0.15	1.22											<u> </u>
Lead	<.023	¥.023	¢,023	\$.023	C.025	<.025	(.025	¢.025	£.023	Phosphatas	¤/₽	0.033	0.04	5 2.02	s c.oz	5 .02	7 (.02	3 <.025	<.025	(.095) ?
Na9 ^m es1um	1.69	1.91	1.69	1,75	1.76	4.31	3.91	1.69	4.31		~									\sim .
Hangantse	0.04	0.05	0.07	0.05	0.05	0.18	0.22	0.04	0.18	Specific	unhas/cm 1	19.3	119	115 1	14.5	113	259	193	113	259
Rercuty	<.0002	¢.0002	4,0002	0.00025	0.00031	0.003	<.0002	¢.9802	.80035	of a decence										
Rołybdenu	₩¢.01	<.01	<.01	<.01	<.01	¢.01	¢.01	<.01	<,a)	Sulfates	#9/1	¥.3	9.23	9.5	9.3	9.8	10.4	10.7	9.25	10.7
Nicke]	0.03	0,02	0.02	e.03	0.025	0.055	0.05	0.02	0.055											
Selenium	<.002	<.D03	<. DO 2	<.no2	<.002	<.nn2	<.002	<.002	<.002	Sulfites	mg/1	0.0	0.0	0,0	0.0	0,0	0.0	0.0	0.0	0.0
Silver	(0.1	\$0.1	0.13	<0.1	«0.1	0.2	0.15	<0.1	0.2											
strontium	4.01	01	\$.01	r.01	<0.1	f. 01	<.01	<.01	01	Dissolved	eg/1	.05	8.09	8.26	8.33	8.53	7.42	\$.61	7.42	8.61
Sadium	7.25	6.5	6.7	1.05	J.1	20.20	15.3	6.5	20.20	OXJ 364										
Yanadium	<ŋ.2	¢0.2	¢0,2	(0,2	(0.2	(0.2	(D.2	<0.2	<0.2	Oissolved	mg/1	78	64	74	69	70	145	128	69	248
Zinc	4.43	A.A7	0.03	0.04	0.0.5	D.95	6,61	0.01	a aj											
										Suspended Sollds	mg/1	8 .0	<1.0	(1.0	33	c1. 0	12	2.5	<1.0	● .0
										Katar Temp	•c 1	19.0	17.9	30.3	22.3	22.4	24.0	15.0	14.0	<u>ج</u>

Average concentrations in mg/ilter. Stations 1 through 5, Connecticut River, Stations 6 and 7, Kennedy Brook (see Figure 3-2). Source: Gibbs 6 Hill, 1981.

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SUMMARY - WATER QUALITY - NORTHERN AQUIFER - COAL LEACHATE											
	1.	2.	3,	۹.	5,	6.	7.	в.	9,		
Parameter	? Drinking Keter Standard (mg/2)	 Average Grount-Ster Quality (mg/t)	Average Conn. River Nater Quality (mg/l)	Average Leachate Concen. (rg/l)	*Leachate Concen. at River Roundary after Of Dispersion (ng/1)	**Roximum Conn. River Concen, after (Lachate Hixing (mg/l)	Ave, leachate Ornewn, after Soil Passage (mg/l)	Loochale Concen. at River Pouvlary after OF Distortsion and Soll Passage (mg/l)	i f Com, River Concen, f after Leochate Allaring [(mg/l)		
Aluminam	-	4.83		0.3	.0001	.0000001	0.265	.000265	+000c700.		
Antiacry	-	0.1	.1	0,1	.0001	,0000001	0.1	.0001	1 1 .0000001		
Armenic	0.05	.0169	.0027	.002	.000002	.000000028	.00875	. 0000088	.00000012		
Barlun	1.0	.031	.1	0.1	.0001	.0000001	. 1375	.0001375	.000002		
₽⊨cy∐tus	-	.005	.005	.005	,000005	.000000007	.005	.000005	.00000007		
f Borom 1 Carbolum	- 0.01	.530	1.25	2.4	.0021	,0000034	2.75	(.00275 , 0000000005	.0000139 .000000000000/		
Calcium	-	\$3.03	9.66	48,2	.0482	.0000681	34.53	.03453	.0000488		
Oncontian	0.05	.03	co.	.02	.00002	, 000000028	.02	.00002	.000000929		
Rtalt	-	.158	.05	0.07	.00007	.00000068	.015	.000675	.0000001		
Capper	1.0	.0319	.021	0.27	,000 27	.0000004	.47	.00047	.0000007		
tran	0.3	24.73	,233	0.64	.00064	,0000000	,0975	.0000975	.0000001		
Land	.05	.031	.025	.025	, 000823	.000000035	.025	.000025	,00000035		
i Reynersium	-	11.55	1,74	2.21	,00228	, 0000032	6.35	.00635	.000000		
 Mangament	0.05	8.52	.052	0.25	,00025	.0000004	.6175	.0008175	.0000012		
Hercury	0,002	,000 76	.00025	0.001 2	.0000012	.docccooo16	,0003	.0000003	.0000000042		
nijodena	i -	0.1	.01	0.1	.0001	.0000001	0.1	.0001	, 000000 l		
Nickel	ų -	0.18	.075	1.61	.00161	,0000023	0.63	.00083	.0000012		
Selenius	0.01	.0037	.002	0,002	,000002	. @000006928	.002	.000002	.0000000629		
silver	0.05	.01	,01	0.01	.00001	,000000014	.02	.00001	,000000141		
Gurantium	<u> </u> -	.794	6.94	0.2	.000 2	,0000003	0.415	.000415	.00707000		
Badium	•	28,31	6.96	7.76	-00776	. 000011	16,71	.01371	,0000194		
Varuellum	-	0.2	.2	0.2	.0002	.0000015	0.2	£ 000.	.0000003		
zine	3.0	, 200	.042	0.05	. 00005	, 000000 J	12,13	.01213	.0000171		

TABLE 4-3

• Concentration entaring river at the end of 10,000 days: Values are based on 2-D Hass Transport Hodel, by Dr. Robert Cleary of Princeton University.

** Communication days arbitrat concentrations,

Source: Gibbe & Hill, 1981.

Note: Leachate tasts run on fresh coal similar to that expected to be used at Mt. Tom generating station.

			TABLE 1-3		
FE	IS Responses		ME, TUM COAL RECONVERSION PERMITS/APPHOVALS OBTAINED		Page 1 of 7
			FIASE 1		
PLA	MIT/APPROVAL/ACTION	DATE OF ISSUANCE OR ACTION	ISSUING AGENCY	PURPOSE	AUTHORITY
1.	Permit to construct, maintain, or use a tank located above- ground containing 100,000 gallons or more of fluid other than water	December 3, 1969 Permit (for the 2,819 gallon abovo-ground tank)	Commissioner, Department of Public Safety	Authorizes the construc- tion, maintenarice, and use of the tank	G.L. c. 148, Section 37
2	License to Store Fuel. Oil in Tanks and Annual Registrations*	April 1981 (Annual Regis- trations for the Licenses listed below except for the 9,900 gallon tank) April 1, 1960 License (for a 1,200 gallon above- ground tank and also for a 16,000 gallon underground tank) November 18, 1969 License (for a 2,819,880 gallon above-ground tank) Angust 6, 1970 License (for a 9,900 gallon under- ground tank) June 15, 1972 License (for a 3,612,000 gallon above- ground tank)	Department of Public Safety, Division of Fire Preventinn, issued by Clerk, Board of Public Safety for the City of Holyoke	Authorizes the storage of fuel oil	G.L. c. 148, Sections s and 13; Code of Ordinan of the City of Holyoke, Sectione 7-15 and 11.1

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		MT. TOM COAL RECONVERS PHASE I PERMITS AND APPROVAL	ION <u>5</u>	
PERMIT/APPROVAL	DATE OF ISSUANCE	ISSUING AGENCY	PURPOSE	AUTHORITY
Special Permit (or Structures in floodpla	June 29, 1981 (letter) in	Holyoke Board of Aldermen	Construction of new 4160 voltswitchgear building, new wastewater treatment building, new load center building.	Section 4-3.d. of the C of Holyoke Ordinances
2. BuildIng Permit*	July 1, 1981 (Certificate No. 215)	Holyoke Department of Codes and Inspections	Construction of new structures described above and upgrading of railroad car thaw shed and cay shaker building,	Massachusetts Buildin Code and City of Holy Code Ordinance.
 Order of Conditions for certain construction activities in wetlands 	or June 15, 1981 (DEQE File No. 186-28)	Holyoke Conservation Commission	Construction in wetlands of three new structures described above.	G.Lc. 131 Section 40 310 CMR 10.00.
 Determination of Nor applicability of Wetlan Act 	- June 16, 1981 nds (DEQE File No. 186-28)	Holyoke Conservation Commission	To establish no jurisidicition of HCC over any activiltes in wetlands except those for which an order of conditions was granted in item J above.	G.L.c. 131, Section 40
i. Site Assignments for Waste Disposal	iołid October 13, 1981	Holyoke Board of Health	T● permit siting of solid waste disposal facilities.	G.L.c. 111, Section 150
	February 5, 1982	Massachusett§ Department of Environmental Quality Engineering (DEQE)	Initial DEQE Decision on Appeal of Site Assignment	
	September 16, 1982		Final DEQE Decision on Appeal of Site Assignment.	
Clarification (not app of authority to burn h sulfur content fuel	roval) July 22, 1981 (letter Irom igh A. lantosca) November 18, 1981 (letter from A. Cortese)	Massachusetts Department of Enviornmental Quality Engineering	To clarily that State Implementation Plan permits buring of alt fossil fuel (not just fuel oil) with a suffar content of 1.21 pounds per million B.T.U. heat release potential.	310 CMR Section 7.034

4Original Posted At Plant

TABLE 1-3 (Continued)

Page 2 of 7

PER	MIT/APPROVAL/ACTION	DATE OF ISSUANCE OR ACTION	ISSUING ACENCY	PURPOSE	AUTHORITY
3.	Order of Conditions for certain construc- tion activities in wet- lands	June 15, 1981 (DEQE File No. 186-28)	Holyoke Conservation Communission	Construction in wetlands of three new structures described above	C.L. c. 131, Section 40; 310 CMR 10.00
4.	Determination of Non- applicability of Wet- lands Act	June 16, 1981 (DEDE File No. 186-28)	Holyoke Conservation Commission	To establish no jurisdic- tion of HDC over any activities in wetlands except those for which order of conditions granted in item 3 above	G.L. c. 131, Section 40
5.	Special Pennit for structures in flood- plain	Jume 29, 1981 (letter)	Holyoke Board of Aldermen	Construction of new 4160 volt switchgear building, new wastewater treatment building, new load center building	Section 4-3.d. of City of Holyoke Ordinances
6.	Auilding Permit*	July 1, 1981 (Certi- ' ficate No. 215)	Holyoke Department of Codes and Inspections	Construction of new struc- tures described above and upgrading of railroad car thaw shed and car shaker building	Massachusetts Building Onde and City of Holyoke Code of Ordinances
7.	Clarification (not approval) of authority to burn high-sulfur content fuel	July 22, 1981 (letter from A. Iontosca); November 18, 1981 (letter from A. Cortese)	Massachusetts Department of Environmental Quality Engineering	To clarify that State Im- plementation Plan permits burning of all fossil fuel (not just fuel oil) with a sulfur content of 1.21 pounds per million Btu heat release potential	310 CMR Section 7.05(1)(c)
8.	MEPA Certificate	September 22, 1981	Massachusetts Secretary of Environmental Affairs	To determine the project's environmental impacts and identify mitigating measures	G.L. c. Section 62-62H

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MT. TOM COAL RECONVERSION PHASE 1 PERMITS AND APPROVALS PURPOSE PERMIT/APPROVAL DATE OF ISSUANCE ISSUING AGENCY AUTHORITY Special Permit for Extended Hours of Construction (through November 30, 1981)* To permit construction activitles after 6:00 p.m. and before 7:00 a.m. on weekdays. October 21, 1981 (Certifi-cate No. 2282) Section 12-21(d) of the City of Holyoke Ordinances 7. Holyoke Board of Public Works November 27, 198. (including site inspec-tion Certificate of of Compliance) Massachusetts Department of Environmental Quality To permit use of solid waste dlsposat facilitles. Plan Approval for Solid Waste Disposal G.L.c. III, Section 150A 8. Engineering United States Environmental Protection Agency and Massachusetts Department of Environmental Quaitty Engineering To permit point discharges of pollutants to waters of United States, Includes Water Quality Certification from DEQE pursuant to G.L.c. 21, Sections 25A, 27 (12) and 43. NPDES Permit (National Pollution Discharge Elimination System) 33 USC Section 1342, and G.L.c. 21, Sections 26A, 27 (12) and 43. 9. November 30, 1981 Masschusetts Department Environmental Quality Engineering To allow discharges to ground water from solid waste disposal facilities and temporary waste-water treatment facilities and to allow construction and opera-tion of tempoary wastewater treat-ment facilities. 10. Discharge to Groundwater and Wastewater Treatment Facilities Permit G.L.c. 21, Sections 27 and 43. November 27, 1981 G.L.c. 146, Sections 8 and 23; 522 CMR Section [5.00 <u>et seq</u>. (Kemper Insurance) To permit operation of modified boiler November 25, 1981 11. Boiler Inspection * Approval of Plans for Temporary Wastewater Treatment Facility Massachusetts Department of Environmental Quality Engineering Approval of plans for temporary wastewater treatment facilities until permanent facilities constructed. G.L.c. 21, Sections 26A, 27(9) and (13) and 43(2) and (5). 12. November 25, 1981

*Original Posted At Plant.

TAULE 1-3 (Continued)

PEN	NIT/APPROVAL/ACTION	DATE OF ISSUANCE OR ACTION	ISSUINC AGENCY	PURPOSE	Αυσιοιγία
9.	Site Assignments for Selid Waste Disposai	Octobor 13, 1981	Holyoke Iward of Health	To pennit siting of solid waste disposal facilities	G.L. c. 111, Section 15
		February 5, 1982	Massachusetts Department of Environmental Quality Engineering (DEQE)	Initial 💵 Decision on Appeal of Site Assignment	C.L. c. 111, Section 15
		September 15, 1982	Massachusetts Department of Environmental Quality Engineering (DEQE)	Pinal DEQE Decision on Appeal of Site Assignment	G.L. c. 111, Section 15
10.	Special Permit for Ex- tended Hours of Con- struction (through November 30, 1981)*	October 21, 1981 (Certi- ficate No. 2282)	Hølyoke Board of Public Works	To permit construction activities after 6:00 pm and before 7:00 am on weekdays	Section 12-21(d) of the Gity of Holyoke Ordina _{th}
11.	Approval of Interim Coal Burn (PVARCD-81- C-D12)	November 6, 1981	UELE, Fioneer Valley Air Pollution Control District (PVAPCD).	Approval of plans and specifications for re- furbisimment of existing precipitator for interim coal burning.	C.L. C., Section 142A; 310 CMR Section 7.02(2); (b), and 7.02(4); 702(5, and 7.04
12.	Delayed Compliance Order	Novenber 24, 1981	United States Environmental Protection Agency	To permit operation of plant before new precipi- tator is installed	42 USC Sections 7413(d) and 7414
13.	Boiler Inspection*	November 25, 1981	(Kenper Insurance)	Yo pennit operation of modified boiler	C.L. c. 146, Sections 8 and 23; 522 CAN Section 15.00 <u>et seq</u> .
14.	Approval of Plans for Temporary Waste- water Treatment Facilit	November 25, 1901 y	Massachusetts Department of Environmental Quality Engineering	Approval of plans for tomporary wastewater treatment facilities untif permanent facilities constructed	G.L. c. 21, Sections 26 27(9) and (13) and 43(2 and (5)

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						Page 3
				MT. TOM COAL RECONVERSIO PHASE I <u>PERMITS AND APPROVALS</u>	N	
		PERMIT/APPROVAL	DATE OF ISSUANCE	ISSUING AGENCY	PURPOSE	AUTHORITY
	13.	Temporary Emergency Certilication to Operate Wastewater Treatment	November 30, 1981	Board of Certilication of Operators of Wastewater Treatment	To permit operation of wastewater facilities until permanent certification obtained.	G.L.c. 112, 87AAAA and 878888.
	14.	Delayed Compliance Order	November 24, 1981	United States Environmental Protection Agency	To permit operation of plant belore new precipitator is installed.	42 USC Section 7413(d)(3) and 7414.
	15.	Occupancy Certilicates	November 30, 1981	Holyoke Department of Codes and Inspections	Occupancy of new \$160 volt switchgear building, rail- road car thaw shed and rail- road car shaker building,	Massachusetts Building Code and City of Holyoke Code of Ordinances.
	16.	License to Store Fuel Oil in Tanks and Annual Regis- trations •	April 1, 1960 License (for a 1,200 gallon above-ground tank and also lor a 16,000 gallon under- ground tank)	Department of Public Safety, Division ol Fire Prevention, issued by Clerk, Board of Public Safety Ior the City of Holyke	Authorizes the storage of fuel oil.	G.L.c. 148, Section 9 and 13; Code of Ordinances of the City of Holyoke, Sections 7~15 and 11.1.
			November 18, 1969 License (lor a 2,819,880 gallon aboveground tank)	;		
			August 6, 1970 License (for a 9,900 gallon under- ground tank)			
		. /	June 15, 1972 License (for a 3,612,000 gallon above- ground tank)			
			April 1981 (Annual Registra- tions for the above Licenses except for the 9,900 gallon tank)			
		Original Posted At Plant.				

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TABLE 1-3 (Continued)

				Page 4 of 7
PERGIT/APPROVAL/ACTION	DATE OF ISSUANCE OR ACTION	ISSUING AGENCY		
15. Plan Approval for	November 27, 1981 (in-	libonature to a	TOIREBE	<u>AUTILIKITY</u>
Solid Waste Disposal	cluding site inspection Certificate of Compliance)	of Environmental Quality Engineering	To permit use of solid waste disposal facilities	G.L. c. 111, Section 105A
 Discharge to Ground Water and Wastewater Treatment Facilities Permit NPDES Permit (Notional) 	November 27, 1961	Massachusetts Department of Environmental Quality Engineeriog	To allow discharges te ground water from solid waste dispesal facilities and tenporary wastewater treatmont facilities and t allew construction and operation of temporary wastewater treatment facilities	G.L. c. 21 Sections 27 and 43
Pollutant Discharge El imination Syten)	Novembor 30, 1981	United States Environmental Protection Agency and Massachusetts Department of of Environmental Quality Engineering	To permit point discharges of pollutants to waters of Lutited States. Includes Vater Quality Certification from DEQE pursuant to G.L. c. 21, Sections 26A, 27 (12) and 43	33 USC Section 1342, and G.L. c. 21, Sections 26A 27 (12) and 43.
18. Temperary Emergency Certification to Operate Wastewater Treatment Facilities	November 30, 1981	Board of Certification of Operators of Waste- water Treatment	To permit operation of waste facilities until permanent certification	G.L. C. 112, 87AAAA and 87BBBB
19. Occupancy Cert'ificates	November 30, 1981	Holyoke Department of Codes and Inspectiens	Occupancy of new 4160 volt switchgear building, rail- road car thaw shed and railroad car shaker building	Massachusetts Building Code and City of Holyuke Code of Ordinances

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			MT. TOM COAL RECONVERSI PHASE I PERMITS MOD APPROVALS	ON 5	
	PERMIT/APPROVAL	DATE OF ISSUANCE	ISSUING AGENCY	PUP Port	
17.	Permit to construct, maintain, or use a tank located aboveground con- taining 10,000 gallons or more of a fluid other than water.	December 3, 1969 Permit (Ior the 2,819,880 gailon aboveground tank)	Commissioner, Department Public Safety	Authorizes the construction, maintenance, and use of the tank.	<u>AUTHORITY</u> G.L.c. 148, Section 37,
17,	Approval of InterIm CoalBurn (PYAPCD-81-C-D12)	November 6, 1981	DEQE, Pioneer Valley Air Pollution Control District (PVAPCD),	Approval of plans and specifications for re- furbishment of existing pre- cipitator for interim coal biarning.	G.L.c., Section 142A; 310 CMR Sectin 7.02(2)a, (b), and 7.02(4); 702(b) and 7.04.

'DABLE 1-3 (Continued)

			PHASE 11		
PD	MI'LAPPROVAL/ACTION	DATE OF ISSUANCE OR ACTION	ISSUING AGENCY	PURPOSE	AUTHORITY
1.	Partial Certificate of Compliance for Order of Conditions File No. 186-28. (lten 2 of Phase 1 Permits)	December 12, 1981	Holyoke Conservation Com- mission	To insure activity de- scribed in Notice of In- tent has been completed in accordance with the Commission's order	Section 7 of 310 CMR
2.	Special Use Permit for Summit House Monitoring Station (Incl. staging authorization)	December 22, 1981	Division of Forests and Parks, Department of Environmental Management	To oxpand existing moni- toring site in Skinner State Park	C.L. c. 132A, Section 2B and 2D
3.	DEQE Approval of Regulations 310 CMR 7.17U	February 4, 1982	Massachusetts Department of Environmental Quality Engineering	To establish sulfur and particulate emission limits, for coal burning	G.L. c. 111, Sections 1428-142D
4.	Pernit for Goat Peak (Mt. Tom Reservation) Air Monitoring	March 15, 1982	Hampden County Commissioners	To establish DCD required monitoring site	
5.	Building Permits* ^o Acoustic Sounder, No. 64 ^o Precipitator Founda- tion, No. 132 ^o Precipitator, Silo and Employee Facility, No. 170	March 17, 1982 May 18, 1982 Juno 16, 1982	liblyoke Building Commissioner	To construct the Doppler Acoustic Sounder and the structures identified above	Massachusetts Building and City of Holyoka Ordinances

*Original posted at plant.

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MT. TOMCOAL RECONVERSION PHASE II <u>PERMITS AND APPROVALS</u>

	PERMIT/APPROVAL	DATE OF ISSUANCE	ISSUING AGENCY	PURPOSE	AUTHORITY
1.	Order of Conditions (DEQE File No. 186-30) Includes letter of clarification and agency response.	April 16, 1982	Holyoke Conservation Commission	To construct new precipitator, new silo complex and new employee facility in floodplain.	G.L.c 131, Sect. 40
2.	Special Permit for structures in flood plain.	May 5, 1982	Holyoke Board of Aldermen.	To construct structures described above in floodplain.	Section 4-3d. of the City of Holyoke Ordinances.
3.	Building Permits* o Acoustic Sounder, No. 64 o Precipitator Foundation, No. 132 o Precipitator, Slio and Employee Facility, No. 170	March 17, 1982 May 18, 1982 June 16, 1982	Holyoke Building Commissioner	To construct the Doppler Acoustic Sounder and the structures Identified above.	Massachusetts Building Code and City of Holyoke Ordinances.
4.	Variance for Precipitator's Height	May 21, 1982	Holyoke Board of Appeals	To construct precipitator above the 60' height restriction for Industrial general (IG) zoned areas.	Sections 7,3(b) and 6-1,a(4) of the City of Holyoke Ordinances,
5.	Occupancy Certificate for Acoustic Sounder	April 20, 1982	Holyoke Building Commissioner	For occupancy and use of structure.	Massachusetts Building Code and Section 4 and 7.1 of the Holyoke Ordinances.
6.	Building Commissioner's Opinion on need for new Special Permit	3une 9, 1982	Holyoke Building Commissioner	For Wastewater Treatment Facility (WTF) enlargement.	Sections 7-1 and 2 of the City of Holyoke Ordinances.

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TABLE 1-3 (Continued)

PERMIT/APPROVAL/ACTION		DATE OF ISSUANCE OR ACTION	ISSUINC AGENCY	PLAPOSE	AURIDRITY
6.	Order of Conditions (DEDE File No. 186-30) includes lotter of clarification and agency response	April 16, 1982	Holyoke Conservation Commission	To construct new preci- pitator, new silo complex and new conployec facility in floodplain	G.L. c. 131, Section 40
7.	Occulmancy Oertificate for Acoustic Sounder	April 20, 1982	Holyoke Building Commissioner	For occupancy and use of structure	Massachusetts Building Oede and Sectinn 4 and 7.1 of the Holyoko Ordinances
8.	Special Permit for structures in flood plain	May 5, 1982	Holyoke board of Aldennen	To construct structures describod in item 6 above in floodplain	Section 4-3d. of the City of Holyoke Ordinances.
9.	Extention of June 15, 1982 Order of Condi- tions (Item 3 of Phase I pennits)	May 20, 1982	Holyoke Conservation Com- mission	To extend construction completion dato for the Wastewater Treatment Facility and Load Center Building	Section 6(4) of 310 CAR 10.00
10.	Variance for Pre- cipitator's lleight	May 21, 1982	Holyoke Board of Appeals	To construct precipitator above the 60 ¹ height restriction for in- dustrial general (IG) zoned areas	Sections 7.3(b) and 6-1.a(4) of the City of Holyoke Ordinances
11.	Nuilding Commis- sioner's Opinion on need for new Special Permit	June 9, 1982	Holyoke Huilding Com- missioner	For Wastewater Treatment Facility (WIF) onlargement	Sections 7-1 and 2 of the City of Holyoke Ordinances
12.	HCC Decision not to require now NUI for WIF Enlargement (Initially approved onder June 15, 1982 Order of Conditions - Phase I, Item 3)	July 29, 1982	Holyoke Conservation Commission	To allow enlargement of the WTF	G.L. c. 131, Soction 40; 310 GJR 10.00

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	MT. TOM COAL RECONVERSION PHASE II <u>PERMITS AND APPROVALS</u>						
	PERMIT/APPROVAL	DATE OF ISSUANCE	ISSUING AGENCY	PURPOSE	AUTHORITY		
7.	Extension of June 17, 1982 Order of Conditions (item 3 of Phase I permits)	May 20, 1982	Holyoke Conservation Commission	To extend construction completion date for the Wastewater Treatment Facility, and Load Center Building.	Section 6 (4) of 310 CMR 10.00		
8.	DEQE Approval of Regulations 310 CMR 7.17U	February 4, 1982	Massachusetts Department of Environmental Quailty Engineering	To establish sulfur and particulate emission limits, for coal burning.	G.L.c. 111, Sections 142B-142D.		
9.	Permit for Goat Peak (Mt. Tom Reservation) Air Monitoring	March 15, 1982	Hampden County Commissioners	To establish DCO required monitoring site.	e-ush		
10.	Speciai Use Permit for Summit House Monitoring Station (Incl. staging authorization)	December 22, 1981	Division of Forests and Parks, Department of Environmental Management.	To expand existing monitoring site In Skinnner State Park	G.L.c. 132A, Section 2B and 2D.		
11.	Approval of Air Pollution Control Equipment.	October 27, 1982	DEQE, Pioneet Valley Air Poliution Control District.	To approve new precipitator plans and specifications.	310 CMR 7.02(2Xa)		
12.	Partial Certificate of Compliance for Order of Conditions File No, 186-28, (Item 3 of Phase I Permits)	December 12, 1981	Holyoke Conservation Commission	To insure activity described in Notice of Intent has been completed in accordance with the Commission's order.	Section 7 of 310 CMR		
13.	Permits for storage and use of flammable substances.	September 20, 1982	Chlef, Holyoke Fire Department	To insure proper storage and use of flammable substances.	G.L.C. 148, Section 9 & 10 and 527 CMR 6.00 et seq.		

Page 6 of 7

TABLE 1-3 (Continued)

PERMIT/APPHOVAL/ACT	FICN DA	ATE OF ISSUANCE OR ACTION	ISSUIN: AGENCY	PURPOSE	AUTIORITY
13. Permits for sto and use of flam substances	orage Se mable	pt e mber 20, 1982	Chief, Holyoke Fire Department	To insure proper storage and use of flammable substances	(J.L. c. 148, Section y and 527 (2.R 6.00 et se
14. Permission to m site plan appro- under Special I for structures floodplain (Pha permits Item 5)	nodify Se oved Permit in a ase I).	ptanber 21, 1982	Holyoke Board of Aldermen	To enlarge wastewater treatment facility building	Holyoke Zoning Ordinan Appendix A, Section 4(.
15. Extended Nork I Permit	Hours Oc	stober 14, 1982	Holyoke Hoard of Public Works	To allow extended work hours for construction of precipitator collector plates and work on the WIF	Nolyoke Zoning Ordinan Appendix A, Section 12-21(d)
 Approval of Ain lution Control ment 	rPoł- Od Equij⊱	ctober 27, 1962	■QE, Pioneer Valley Air Pollution Control District	To approve new precipi- tator plans and specifi- cations	310 ONR 7.02(2)(a)
17. Determination of plicability red filing of an NW storage of ash Borrow Pit Area (incl. P.M. Sme letter's of Sep tember 23, 1982 December 1, 198	of Ap- No quiring Ul for in a all's p- 2 and 82)	ovænber 8, 1982	Hulyoke Conservation Com- mission	To determine pround water effects due to storage of ash in Borrow Pit Area	G.L. c. 131, Section 4 310 CNR 10.00
18. Cross Connectio Permit	on No	w e mber 19, 1982	Massachusotts Department of Envirnnmental Quality Angineering	To prevent contamination of potable water supplies from connection of potable water to non-potable water systoms	G.L.c.111, Section 150 310 Cull 22.22

NUSCO Comments

Page 3

Page 7 of 7

	PERMITS AND APPROVALS					
	PERMIT/APPROVAL	DATE OF ISSUANCE	ISSUING AGENCY	PURPOSE	AUTHORITY	
14.	Permission to modify site plan approved under Special Permit for structures in a floodplain (Phase I permits Item 1).	September 21, 1982	Holyoke Board of Aldermen.	To enlarge wastewater treatment facility building.	Holyoke Zoning Ordiances, Appendix A, Section 4(d)(6).	
15.	HCC Decision not to to require new NOI for WTF Enlargement. (initially approved under June 15, 1982 Order of Conditions – Phase I, Item 3)	July 29, 1982	Holyoke Conservation Commission	To allow enlargement of the WTF.	G.L.c. 131, Section 40; 310 CMR 10.00.	
16.	Determination of Applicability requiring filing of an NO1 for storage of ash in Borrow Pit Area (incl. P.M. Small's letter's of September 23, 1982 and December 1, 1982)	November 8, 1982	Holyoke Conservation Commission	To determine groundwater affects due to storage of ash in Borrow pit area.	G.L.c. 331, Section 40; 310 CMR 10.00	
17.	Extended Work Hours Permit	October 14, 1982	Holyoke Board of Public Works	To allow extended work hours for construction of precipitator collector plates and work on the WTF.	Holyoke Zoning Ordinace Appendix A, Section 12-21(d).	
18.	Cross Connection Permit	November 19, 1982	Massachusetts Department ol Environmental Quality Engineering	To prevent contamination of potable water supplies from connection of potable water to non-potable water systems.	G.L.c. 111, Section 150 A; 310 CMR 22.22.	

MT. TOM COAL RECONVERSION

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UNITED STATES DEPARTMENT OF COMMERCE Mational Oceanic and Atmospheric Administration Weshington. D.C: 20235 OFFICE OF THE ADMINISTRATOR

December 30, 1982

Ms. Anne Randolph U.S. Department of Energy Economic Regulatory Administration Division of Fuels Conversion 1000 Independence Avenue, S.W. Room GA-093 Washington, D.C. 20585

Dear Ms. Randolph:

This is in reference to your draft environmental impact statement entitled "Conversion to Coal, Mt. Tom Generating Station, Unit 1, Holyoke, Hampden County, Massachusetts." The enclosed comments from the National Oceanic and Atmosoheric Administration is forwarded for your consideration.

Thank you for giving us the opportunity to orovide these comments, which we hope will be of assistance to you. We would appreciate receiving two copies of the final environmental impact statement.

Sincerely,

41

Dand Lot Joyce M. Wood

Chief Ecology and Conservation Division

Enclosure: Letter from Ruth Rehfus, National Marine Fisheries Service



10TH ANNIVERSARY 1970-1980 National Oceanic and Atmospheric Administration A young agency with a historic tradition of service to the Nation

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UNITED STATES DEPARTMENT OF COMMERCE National Dcaanic and Atmospheric Administration NATIONAL MARINE FISHERIES SERVICE Services Division Habitat Protection Branch 7 Pleasant Street Gloucester, MA 01930

December 21, 1982

U.S. Department of Energy Economic Regulatory Administration Office of Fuels Programs Washington, D.C. 20585

Dear Sir:

This is in regard to the Draft Environmental Impact Statement, dated October 1982, for the Mt. Tom Generating Station's coal reconversion project.

We have corresponded with both the Northeast Utilities and the Department of Energy, Environmental Analysis Branch, about the presence of shortnose sturgeon in the Holyoke Pool. (See attached letters.) The Final Environmental Environmental be supplemented to reflect the information presented in that correspondence.

It is our conclusion from this previous correspondence that shortnose sturgeon in the Holyoke Pool will not be adversely impacted by the proposed reconversion to coal. Therefore, further consultation under Section 7 of the Endangered Species Act of 1973, as amended, is unnecessary at this time. Should project plans change, or should other information become available that changes the basis for this decision, then consultation should be reinitisted.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration

NOAA-1 As described in the letters attached to the comment, studies of shortnose sturgeon in the Holyoke Pool show limited movement of this species near the Mt. Tom plant. Spawning occurs in the upper reaches of the pool where the bottom substrate is rubble, coarse gravel, and boulder, and where the river flow is rapid. All sturgeon except one were collected within four defined river segments, each well upstream of the plant. Tagged fish showed limited movement, with none found closer than 13 miles upstream of the plant.

As indicated in the Errata for page 3-38 (Section 2.0 of FEIS), the Connecticut River contains a stable, but not a healthy (in terms of reproductive capacity) population of shortnosed sturgeon. Both the apparent absence of sturgeon in the reach of the river near the plant and the insignificant effect expected on water quality support the conclusion that there will be no adverse effect on shortnose sturgeon due to reconversion to coal at Mt. Tom.



Environmental & Technical Services Division Environmental Assessment Branch 7 Pleasant Street Gloucester, Massachusetts 01930

April 22, 1980

Hs. Margaret B. Wills Environmental Analysis Branch Office of Fuel Conversion Department of Energy Washington, D.C. 20461

Dear Ms. Wills:

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This is in response to your March 7, 1980. letter regarding the responsibilities of the Department of Energy under Section 7 of the Endangered Species Act (ESA) of 1973, as an ended, resulting from the proposed conversion of the Mt. Tom Generating Station. The conversion process constitutes a federal action to which the requirements of Section 7 of the ESA apply. The endangered shortnose sturgeon is found in the Rolyoke Fool on the Connecticut River adjacent to the plant. Therefore, an assessment of the inpact of the plant on shortnose sturgeon should be included in the draft environmental impact statement for the project.

The amiotated bibliography of shortnose sturgeon and draft nanuscript on the Synopsis of Biological Data on Shortnose Sturgeon by Michael Dadswell (not for reproduction or citation until published), forwarded to you in my Pebruary 29, 1980 latter contains references to, and information on the shortnose sturgeon in the Holyoke Pool. Mr. Boyd Kynard, Asst. Leader at the Massachusetts Cooperative Fishery Research Unit (USFWS) at Holdsworth Pall, University of Massachusetts, Amberst, MA 01003, has done or is planning to do shortnose sturgeon research is that area and may be a good contact for detailed information.

Sincerely,

Douglas W. Beach Wildlife Siologist

Diffeach:837-9205:djh:4/21/80

Services Division Habitat Protection Branch 7 Pleasant Street Gloucester, MA 01930

October 2, 1981

Mr. W. G. Counall' Northeast Utilities P.O. Box 270 Eartford, CT 06101

Dear Mr. Comail:

We have received a copy of your letter of July 31, 1981. to Mr. John Brwick, Executive Office of Environmental Affairs concerning the Braft Environmental Impact Report for the Mt. Tom Coal Reconversion Project. We have reviewed the Report and have noted that the codingered shortness sturgeon (<u>Actionner Drevinstrum</u>) was stated in Section IV(N) (2) as resident in the areas, however no discussion of potential impacts to this species were included. Enclosed for your information is a copy of our letter of April 22, 1980, to Ms. Wills of the Department of Energy regarding this project.

Sinceraly,

Ruth Behfus Branch Chief

Enclosure

DHBeach: 837-9288:10/2/81:mls

cc: FWS-Concord, F/NER542-Ludwig, FOE-MA, DC-Ms. Wills

Northerst Utilities



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P.O. BOX270 MARTFORD, CONNECTICUT 08101 (203) 688-6911

October 21, 1981

Ms. Ruth Rehfus Branch Chief Babitat Protection Branch National Marine Fisheries Service 7 Pleasant Street Gloucester, MA 01930

RE: Mt. Tom Coal Reconversion Project

Dear Ms. Rehfus:

Thank you for your letter of October 2, 1981, in which you comment that there was no discussion of potential impacts of the Mt. Tom Coal Reconversion Project on shortnose sturgeon in the Draft Environmental Impact Report (EIR) we submitted on July 31 to the Massachusetts Executive Office of Environmental Affairs pursuant to the Massachusetts Environmental Policy Act (MEPA).

Your letter was dated and received by us after the September 7 deadline for submission of comments on the Draft EIR and also after the September 18 filing of our Final EIR, a copy of which was mailed to your office at 14 Elm Street in Gloucester. Thus we could not respond directly to your comment in the Final EIR. Nevertheless, we believe that a reading of the detailed discussion of water quality impacts in that report will indicate why we do not believe the Mt. Tom project will have any effect on this species.

Although we do not believe that further discussion of the concern expressed in your letter is required under MEPA, and we presume the subject will be considered by the U.S. Department of Energy in preparing its Environmental Impact Statement under NEPA, nevertheless, we thought it would be helpful to send this letter to you elaborating upon our conclusion that the Mt. Tom activities will have no effect on the shortnose sturgeon in the Connecticut River.

First, the Final EIR and the Draft EIR describe, in depth, that the Droject will not change water quality in the Holyoke Pool or result in any modification to the intake structure for the Mt. Tem power plant. It is only such

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changes or modifications that would raise the possibility of effects on the species in the river at or below the plant.

Second, studies of shortnose sturgeon in the Holyoke Pool indicate there is very limited (if any) movement of this species near the Mt. Ton plant. Spawning occurs much farther upriver. The Holyoke Pool section of the Connecticut River extends from rkm 139 (Holyoke Dam) to rkm 198 (Turners Falls Dam). The Mt. Tom plant is located at rkm 149, and the population of shortnose sturgeon (approximately 450 adults) in the pool has been found to aggregate in fairly predictable areas upstream from the plant. In studies by Taubert (1978 a,b), all shortnose sturgeon (187) except one were collected within four 5-km river sections: rkm 155-159, 165-169, 175-180 and 190-194 (all well upstream of Mt. Tom). Movement within these areas was quite limited. Taubert (1978b) radio tagged fifteen (15) fish suring varying parisds of his study. Twolve (12) individuals did not move more than 1.3 km after periods ranging from 1 day to several months; the remaining three fish moved 11, 9.4, and 11.2 km's after 6 days, 16 days, and one month five days, respectively. Each of these fish, however, was tagged above rkm 162, and none moved below this point.

In addition to these movement studies, Taubert's work also indicated that spawning of shortnose sturgeon takes place in the early spring at the uppermost areas of the Holyoke Pool. Bottom substrate in those areas is rubble, coarse gravel and boulder, and river flow is rapid. These conditions are preferred spawning habitat (Scott and Crossman 1973; Dadswell 1979; Gillis et al 1980). In the Holyoke Pool, a total of 13 shortnose sturgeon larvae have been collected, all above km 179. Attached is a list of studies which we have used in our own work.

If you have additional comments or concerns after reviewing our Final EIR and this letter, we hope you will promptly contact our Mr. Ron Osella, Supervisor, Fossil and Hydroelectric Licensing, at (203) 666-6911, Extension 5448.

Very truly yours,

NORTHEAST UTILITIES SERVICE COMPANY As Agent for Holyoke Water Power Company

W. G. Counsil Senior Vice President

LIST OF STUDIES

Taubert, B. D. and R. J. Reed. 1978a. Observations of shortnose sturgeon (<u>Acipenser brevirostrum</u>) in the Holyoke Pool, Connecticut River, Massachusetts. Progress report to Northeast Utilities Service Company, Hartford, Connecticut. January, 14 pp.

Taubert, B. D. and R. J. Reed. 1978b. Observations of shortnose sturgeon (<u>Acipenser</u> brevirostrum) in the Holyoke Fool, Connecticut River, Massachusetts during 1978. Progress report to Northeast Utilities Service Company, Hartford, Connecticut. November, 9 pp.

Scott, W. B. and E. J. Crossman. 1973. Freshwater fishes of Canada. Bull. Fish. Res. Bd. Canada. 184:966p.

Dadswell, Michael J. 1979. Biology of the shortnose sturgeon, <u>Acipenser brevirostrum</u> LeSuer 1818 (Osteichthyes: Acipenseridae) in the St. John River estuary, New Brunswick, Canada. Can. J. 2001. 57:2186-2210.

Gillis, G. M., M. J. Dadswell, D. Townsend and O. Washburn. 1980. Studies of the early life history stages of shortnose sturgeon, <u>Acipenser brevirostrum</u>, in the St. John River, New Brunswick, Canada. Progress report to Northeast Utilities Service Company, Hartford, Connecticut, December, 120 p.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J. F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203

December 28, 1982

Robert J. Stern Director Office of Environmental Compliance Department of Energy Washington, D.C. 20585

RE: D-DOE-B07007:MA

Dear Mr. Stern:

We have reviewed the Draft Environmental Impact Statement (DEIS) for the conversion from oil to coal of Unit 1 of Holyoke Water Power Company's Mt. Tom generating station in Holyoke, Massachusetts.

This DEIS assesses the impacts associated with the issuance by the Department of Energy of a proposed Notice of Effectiveness finalizing an earlier order under the Energy Supply and Environmental Coordination Act prohibiting the use of petroleum products as a primary energy source at Unit 1 at Mt. Tom. As is stated in the DEIS, this unit began burning coal in December, 1981, under the terms of the Environmental Protection Agency's Delayed Compliance Order issued under the Clean Air Act and National Pollutant Discharge Elimination System permit under the Clean Water Act. Therefore, based on our areas of jurisdiction and expertise we have no objections to the issuance of a Notice of Effectiveness for this coal conversion. Additional comments are enclosed.

In accordance with our national rating system, we have rated this EIS LO-1, "lack of objections".

We would appreciate receiving two copies of the FInal EIS when it becomes available.

Sincerely yours,

Lester A. Sutton P.E. Regional Administrator

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COMMENTS ON DEIS FOR MT. TOM COAL CONVERSION

In general, we believe that the air Quality modeling and analysis done for the DEIS provides reasonable results and are in substantial agreement with the analysis performed by EPA for our Delayed Compliance Order. We offer the following comments for your use in preparation of the Final EIS.

- 1. We note that the evaluation of radionuclide emissions is not specific to the coal conversion at Mt. Tom and that the majority of the reference material relevant to these emissions is EPA's federal register notice of December 27, 1979, which lists radionuclides as hazardous air pollutants. Since the purpose of this EPA notice was to list radionuclides as hazardous air pollutants and are not intended to be used to make emissions estimates for specific power plants. The impacts at Mt. Tom (22 years old 145 MWe power plant releasing about one percent fly ash) may be similar to the "typical" plant described in the EPA notice; however, we believe it would be appropriate for the FEIS to point out that the emissions from Mt. Tom vary depending on the type of coal used and the known variability of radionuclide emissions from different coals.
- 2. In Appendix A, p. E-14, the statement that "the radiation doses cited in Table E.9 are far below those incurred from naturally occurring background radiation" does not address the fact that there are anticipated increased levels of radiation associated with the combustion of coal. We suggest that a more appropriate statement might be: "the radiation doses cited in Table E.9 are only 15% of those incurred from background radiation and thus are expected to have minimal additional impact on public health".

EPA-2

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EPA.

- 3. On p. 3-34 the DEIS inaccurately states that the nonattainment area which required a "rebuttal of regional limitation" for the Delayed Compliance Order was the City of Springfield. The location of the primary standards violation was Chicopee, Massachusetts, not Springfield.
- We suggest that the discussion of potential sources of fugitive emissions (p. 4-13) also include flyash handling and disposal areas.

U.S. Environmental Protection Agency

- EPA-1 The only purpose in presenting the "typical" power plant radionuclide emissions was to provide a relative basis for comparison of radionuclide emissions from a coal- and oil-fired power plant. The results presented in the DEIS were not intended to be used to quantify radionuclide emissions from the Mt. Tom Station. The EPA projections showed only small increases in maximum radiation exposure using the typical power plant approach. With the results of this projection in mind, the results of the Mt. Tom trace element study (performed by Environmental Research Group, Inc. (EGR) for NUSCO, see Response NU-35) further substantiates the contention that there will be no significant radiological effects associated with the conversion to coal of this facility.
- EPA-2 This comment is acknowledged. The predicted radiation doses to bone and lung given in Table E.9 for a model 1000 MWe coal-fired power plant are in fact only 15 and 2 percent, respectively, of the estimated background U.S. dose rates. It should also be noted, however, that the Mt. Tom generating station is much smaller than the typical power station used by EPA. The implication is that the percentage contribution to estimated background dose rates should be even smaller than those given above.
- EPA-3 The comment is acknowledged. The discussion on page 3-30 for particulate matter is consistent with this. The discussion on page 3-34 is in error. See Errata, Section 2.0 of FEIS.
- EPA-4 In addition to the four potential sources of fugitive dust emissions listed on page 4-13, a fifth category should be added, as follows:
 - 5) Fly ash handling and storage-transfer of fly ash to onsite storage areas, the transfer of fly ash to vehicles for transport to offsite disposal areas, and wind erosion of fly ash.

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DEPARTMENT OF THE ARMY NEW ENGLAND DIVISION. CORPS OF ENGINEERS 424 TRAPELO ROAD WALTHAM, MASSACHUSETTS 02254

December 29, 1982

Planning Division Impact Analysis Brench

ACALY TO ATTENTION OF

Ms. Anne Randolf U.S. Department of Energy Economic Regulatory Administration Division of Fuels Conversion 1000 Independence Avenue, S.W. Room GA-093 Washington, DC 20585

Dear Ms. Randolf:

We have reviewed your Draft Environmental Impact Statement for Correraion to Coal for the Mt. Tom Generating Station, Unit 1, in Holyoke, Massachusetts. The document addressed issues regarding the reconversion of an existing oil-fired plant to coal. Mr. W. G. Counsil of Northaast Utilities submitted Plan-Sheet 1 (date 2-19-81) to our Regulatory Branch requesting a Department of Arwy permit determination. We replied in the attached 20 April 1982 letter to Northeast Utilities indicating e permit would not be required. If these plans are still current and no new ash disposal sites are proposed, then we would have no further comments on the action. However, if new plans or sites are proposed, we would want to review them for permit activity.

Should you have any questions please contact Mr. David Tomey of my steff at FTS 839-7139, or Ms. Kathy Goodrich of our Regulatory Branch at FTS 839-7495 for regulatory matters.

Sincerely,

Attachment

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Department of the Army, Corps of Engineers

COE-1 No response is required.

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DEPARTMENT OF THE ARMY

NEW ENGLAND DIVISION. CORPS OF ENGINEERS 424 TRAPELO ROAD WALTHAM. MASSACHUSETTS 02254

THAM. MASSACHUSETTS 02234

REPLY TO ATTENTION OF: NEDOD-R-24

20 April 1982

RECEIVED

Northeast Utilities ATTN: Mr. W. G. Counsil PO Box 270 Hartford, CT 06101

APR 2 ? 1982 SEMIOR VICE PRESIDENT Nuclear Engineering & Operations

Dear Mr. Counsil:

This is in response to your letter of 18 March 1982, requesting a determination as to the need for a Department of the Army permit for the proposed Mount Tom Coal Reconversion Project at Bolyoke, Massachusetts as shown on your plans entitled "Mt. Tom Power Plant Coal Conversion Site Plan-Sheet 1 Bolyoke, Mass." in three sheets dated "2-19-81."

A Department of the Army permit is not required for this work. Our regulatory jurisdiction is over all work in or affecting navigable waters of the United States under Section 10 of the River and Harbor Act of 1899 and over the discharge of dredged or fill material into all waters of the United States including adjacent wetlands under Section 404 of the Clean Water Act. As shown on your plans, no dredged or fill material will be placed in any waterway or wetlands. Hence, no further action is required.

If you have any questions on this matter, please contact Mr. Robert Taylor at 617-894-2400, extension 332, or use our toll free number 1-800-362-4367.

Thank you for the opportunity to comment.

Sincerely,

ROBERT J. DESISTA Section Chief Regulatory Branch Operations Division

Copy Furnished: Northampton Planning Dept. ATTN: Mr. Larry Smith City Hall, 210 Main Street Northampton, MA 01060

Joseph Ignazio, Planning Division

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United States Department of the Interior

OFFICE OF THE SECRETARY WASHINGTON, D.C. 20240

'JAN 5 1983

Ms. Anne Randolph Office of Fuels Programs Economic Regulatory Administration 1000 Independence Avenue, S.W. Washington, D.C. 20585

Dear Ms. Randolph:

We have reviewed the draft environmental impact statement for Conversion to Coal, Holyoke Water Power Company, Mt. Tom Generating Station, Unit 1, Holyoke, Hampden County, Massachusetts and have the following comments.

Air Quality

Stack emissions of major pollutants under various fuel-use alternatives are compared, including continued burning of fuel oil. In Table 2-2, page 2-11, under the proposed lowsulfur coal alternative, a major disadvantage listed is that of increased long-term sulfur dioxide (SO₂) emissions. However, other discussion in the draft statement, such as Section 4.2.3.4, page 4-24, states that SO₂ increases can be considered unchanged. This apparent discrepancy should be clarified in the final statement.

In addition, the final statement should acknowledge the high level of controversy over the effects of acid deposition on lakes and ponds.

Endangered Species

No mention was made of threatened or endangered plants in the discussion in Section 3.4.3. The small whorled pogonia (Isotria medeoloides) was officially listed as an endangered plant effective October 12, 1982. An historical population of these plants was known to occur near the Mt. Tom facility in East Hadley, Hampshire County. However, even though the plant is no longer believed to be present at this location, the final statement should indicate whether a remanant population can be found there.

Sincerely,

Bruce Blanchard, Director

D01-2

D01-3

Bruce Blanchard, Director Environmental Project Review

U.S. Department of the Interior

- DOI-1 Table 2-2 is in error and has been corrected in the Errata, Section 2.0. There is a slight increase in allowable 24-hour SO_2 emissions, but essentially no change in long-term emissions (Table 4-6, p. 4-15).
- DOI 2There is indeed a considerable amount of controversy over the effects of acid deposition on lakes and ponds. There is, in fact, no general consensus among investigators on the relationships between power plant emissions and acid rain. However, those who support the thesis that power plant emissions contribute to acid rain generally believe that significant transport time is required for atmospheric chemical reactions to occur leading to acid rain. The corresponding transport distances are thought to be of the order of hundreds of miles. In addition to these uncertainties, the actual formation of acid rain is not fully understood, making it difficult to quantify the source(s) or the effects of acid rain on lakes and ponds.
- DOI-3 The small whorled pogonia (<u>Isotria medeoloides</u>) was officially listed as an endangered plant, effective October 12, 1982 (subsequent to publication of the DEIS). This plant is restricted generally to a habitat on wooded slopes near streams. No habitat of this type exists on the Mt. Tom property and none will be affected by the proposed reconversion to coal. Therefore, no adverse impact on this plant is expected due to the proposed action.



The Commonwealth of Massachusetts Executive Office of Environmental Affairs 100 Cambridge Street Boston, Massachusets 02202

MICHAEL S. DUKAKIS GOVERNOR JAMES S. HOYTE SECRETARY

February 28, 1983

Re: DOE/EIS-0092-D Conversion co

Coal - Mt. Tom Generating

Station, Unit 1, Holyoke, MA

Ms. Anne Randolph Office of Fuels Programs Fuel Conversion Division Economic Regulatory Administration 1000 Independence Avenue, S.W., Room GA-093 Washington, D.C. 20585

Dear Ms. Randolph,

This office has reviewed the Draft EIS, and would like to take this opportunity to acquaint you with our questions and comments. In general, we note that the EIS summary (PV) concludes that the coal conversion will not produce any long-term impacts, yet the paragraph before lists as unresolved issues (1) the extent of possible future contamination of surface and ground water, (2) possible future need to line on-site ponds, (3) encroachment on the 100 year floodplain. Without answers in those areas, how can such a conclusion be reached:

Ground Water

Section 4.2.2.2 on ground water impacts concludes that since no degration of ground Water has been indicated by initial monitoring results, there is no concern over the present basin construction. However, the monitoring as discussed on page 4-11 indicates higher concentrations downgradient for wells 0W-5 and 0W-18 as well as increases in concentrations of Cd, Pb, Ni, and Hg. Since the hydrologic study predicts that contamit ants should not have reached the wells yet, the section concluded that these changes may not be due to the influence of infiltrating water from the various basins. If the increases are not from this site, what other source is suspected? What is the likelihood instead that the hydrologic study was wrong?

Page 4-ll indicates problems with sampling and testing methodology which were finally standardized in February 1982. How does standardization after this date allow for comparision with the earlier pre-conversion data?

Page 4-25 indicates that remedial action can be taken to protect migratory fish if problems show up in the observation wells. What options are available to interrupt the predicted 20 year passage of contaminants to the river?

Massachusetts Executive Office of Environmental Affairs

EOEA-1 The conclusion that no long-term impacts to the environment would result was qualified by the existence of several migitating actions which included continued monitoring of water quality, sale of fly ash and provision of compensatory flood storage. The issue of additional encroachment on the 100-year floodplain of the Connecticut River has been resolved by the utility's commitment to avoid disposal of ash onsite outside of the existing storage basins. This decision has also resolved the need for further archaeological studies. All fly ash will be removed from the site dry and either sold or disposed in DEQEapproved landfills. Bottom ash will be periodically removed from existing temporary storage basins onsite for offsite disposal in the same landfills. There will be no need to utilize the additional 44 acre-feet of floodplain storage which would be required if the ash were disposed of onsite.

> The Special Wastewater Basin has been lined to eliminate any significant potential for contamination of surface and ground water. A final hydrogeologic report is being prepared to present conclusions based on the ground water monitoring program. NUSCO has committed in the MOU to work closely with DEQE should there be any need to take further action for protection of water resources.

EOEA-2 The post-conversion data reported in the DEIS did not show a general increase in concentrations sufficient for a conclusion to be drawn about cause and effect. Furthermore, only a single post-conversion quarterly sample was available for analysis. Additional samples through October of 1982 have been analyzed. None of the apparent increases reported in the DEIS, either from upgradient to down gradient across potential pollutant sources or with time at the same well, were manifested in these data. A thorough analysis of the data will be prepared in Gibbs & Hill's final hydrogeologic report (to be completed in spring of However, the data show no apparent 1983). evidence of pollutant migration from the basins into the ground water. Furthermore, note that the Special Wastewater Basin was lined in October of 1982, further minimizing the chance of pollutant infiltration.

- EOEA-3 The methodology problems in the ground water sampling and testing program related to the analysis of dissolved versus total concentrations. Since the issue is the quality of ground water which may migrate from the site, dissolved parameters most accurately reflect the potential for water resource contamination. Furthermore, total concentration measurements are subject to the condition of the well and sample (i.e., the amount of particulate in the sample). Preconversion data were for dissolved concentrations and, therefore, reflect an appropriate baseline. Total concentrations were measured in December of 1981 and January of 1982 as required by the Subsurface Discharge permit issued by DEQE. The apparent increase in concentrations of certain parameters in December happened to coincide with the conversion to coal but actually reflected the higher concentrations to be expected with unfiltered samples measuring total, instead of dissolved. concentrations. Since February of 1982, samples have been tested for both dissolved and total parameter concentrations. These data will be reported and analyzed in the final hydrologic report. The data show no general increase in dissolved constituent concentrations since coal conversion. However, they do show frequent higher concentrations for total metals than for dissolved. There is no reason to believe that this situation has been affected by conversion to coal.
- EOEA-4 NUSCO has committed to lining the Special Wastewater Basin and to discontinuing wet sluicing of fly ash to the south basin after March 1, 1983. These actions reduce the likelihood of significant contamination of the ground water and, consequently, of the Connecticut River beyond that considered in the DEIS. Should unexpectedly high concentrations of toxic substances which may be related to the waste handling and treatment facilities be detected in the ground water monitoring program at any time during future coal burning operations, the Memorandum of Understanding between the Commonwealth of Massachusetts and the Holyoke Water Power Company provides that DEQE may stipulate necessary additional remedial actions.

Page 2 Ms. Anne Randolph from Samuel G. Mygatt February 28, 1983

If discharge to ground water is found to be equivalent to a delayed discharge to the waste waters treated to precipitate out most of the contaminants prior to discharge up to the fiver? to the river? It is hoped that the final EIS will include analysis of more recent test results.

Trace elements, radionuclides

N. D. has prepared a trace element study, date October 1982, which should be reviewed and summarized in the Final EIS. Is the predicted 132 increase in radiation exposure to bone deemed significant?

E0EA-6

E0EA-12

EOEA-7 Table 4-7, page 4-19, should present the "wide variations" as ranges in addition to the average volues presented.

Prime Farm Land

The potential loss of 15 acres of prime farm land (section 4.2.4.2 and 4.2.5.1) is dismissed as insignificant. The writer should be aware of the state policy of promoting preservation of agricultural land. Past studies have indicated 85% of the state's $^{\circ\circ}$ food is imported while 85% could have been produced locally. Prime farm land has been diminishing rapidly such that the state is now purchasing several million dollars of development rights yearly to slow the process. Will the trace metals present in the ash affect the eventual ability of the land to produce edible crops? For how long?

Noise

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The discussion of noise impact (section 4.2.5.5) correctly identified the 10Db(A) $\breve{\omega}$ state criterion, but failes to mention that the criterion applies at the property line. Θ The identified mitigation on page 4-30, thus, may be highly desirable. E0EA-11/E0EA-10

Unavoidable Adverse Impacts

5.1.1 2) and 3) What is the population exposed to these increases? Will the 85% increase in NO, have an effect on acid rain?

5.2.3 - Water Quality

If any pollutant plume will take 20 years to reach the river, isn't monitoring desirable for more than a one-year period?

Conflicts Between the Proposed Action and the Objectives of Federal, Regional, State and Local Plans

EDEA-13 Our analysis of the data provided by the proponent found no impact to the floodplain for phase I (103 acre feet of storage) if the proposed 300 acre feet of compensatory storage were provided, but that the additional 44 acre feet of displacement

EOEA-5 As indicated previously, the Special Wastewater Basin is to be lined and any effluent will be treated to conform with the NPDES effluent limitations. Furthermore, the subsurface discharge permit issued to HWP on November 27, 1981 specifies discharge limitations for dissolved copper and iron which are equal to the NPDES limitations for total copper and iron (1.0 mg/l). Discharge limitations for dissolved nickel and zinc are 2.0 mg/l, which is the same as the maximum daily NPDES limitations.

> The slow movement of ground water to the river means that these low concentrations would be even further diluted by mixing in the river. Thus. percolation of the wastewaters through the ground water poses no greater potential for harm to water quality than treatment and surface discharge from lined ponds.

EOEA-6 A trace element study was performed by Environmental Research Group, Inc. (ERG) for Northeast Utilities in order to determine the composition of the source coal and its combustion products. The study was performed in June and July of 1982 and provides information on both the organic and inorganic constituents of coal, bottom ash, precipitator ash, and emitted fly ash.

> The results of the study were found by ERG to be quite typical in terms of what they expected to observe for this type of facility. The solid combustion products (i.e., fly ash) were found to be comprised of various minor elements. especially aluminum, iron, sodium, potassium, calcium, and magnesium, as well as some trace elements. The volatile elements of most interest were lead, arsenic, antimony, selenium, and mercury. These elements were found to be lower in concentration in the bottom ash than in the fly ash. The results of the organic analyses did not reveal the presence of any priority pollutants. The primary reason for this is that the in-stack temperature is thought to be high enough to destroy even the most resistant of compounds. The radiological analyses confirmed the presence of only very minor radioactivity and this was due to naturally occurring quantities of thorium, uranium, and potassium-40 and their daughter products.

Page 3 Ms. Anne Randolph from Samuel G. Mygatt February 28, 1983

required for ash storage on-site during phase II would raise flood elevations upstream from the site for the entire length modeled. This is not compatible with the state wetland regulatory policy.

Thank you for the opportunity to comment, and for working with the State to evaluate the environmental effects of the conversion.

Sincerely, 16 Mant Executive Director

Executive Director Environmental Impact Review

SGM/e1k

cc: Cleone Rotan, Dames & Moore Denning Powell, N. U. Tom Powers, DEQE Rich Caretien, DEQE Although there may be an increase in radioactive emissions from the station as a direct result of the conversion to coal as a primary fuel source, no significant radiological effects are expected. The trace element study performed for Northeast Utilities by ERG has confirmed that radioactive emissions associated with coal-burning will indeed be very minor and will result from the combustion of naturally occurring quantities of thorium, uranium, and potassium-40 and their daughter products.

- EOEA-7 The values given in Table 4-7 for trace element concentrations in coal and oil are representative of what are considered to be average values that were obtained by Sax (1974) in a review of published literature. The results given in the table were derived by Sax from a number of documents, and as a result, the presentation of the ranges of the observed concentrations is not practical. The purpose in presenting this information was to provide a relative, rather than an absolute, comparison of the trace element characteristics of coal and oil.
- EOEA-8 HWP has committed to offsite disposal of all ash after March 1, 1983. The prime farmland will not be used for ash disposal.
- EOEA-9 DEQE's guideline limits sound level increases to no more than 10 decibels above ambient at the property line. Calculations of potential sound level increases presented in Table 4-13 of the DEIS were performed at noise sensitive areas. including the nearest residences, because the Commonwealth of Massachusetts agreed to waive enforcement of this guideline in recognition of the good faith effort to minimize generation noise (Memorandum of Understanding, March 6, 1980). The MOU contains a provision allowing DEQE to discuss and impose additional noise suppression steps which are deemed "necessary and appropriate" if "DEQE should receive repeated and justifiable complaints concerning noise generated by sources or activities at the power plant which have not been identified and are not anticipated at the date of this Memorandum."

- EOEA-10 The maximum impact on ambient ground level concentrations resulting from the increase in stack emissions from this facility can be expected to occur within approximately 1 mile of the station. Fugitive dust emissions will have their greatest impacts immediately adjacent to and downwind of the station. The discussion on land use in the vicinity of the site (Section 3.5.1.3, page 3-45), indicates that within a one-mile radius of the station, the land is not intensely developed. There are fewer than 50 houses and there are no schools or hospitals within this one-mile radius.
- EOEA-11 It is the general opinion of most investigators of acid rain that emissions of SO₂ and NO_x into the atmosphere are the primary causes of acid rain and acid deposition. There is little agreement, however, on the relationships between the amounts of SO_2 and NO_x emitted and the concentration of atmospheric ácid downwind of the source. Although it is believed that NO_X emissions may be less important than SO_2 in the formation of acid rain, just how much less has not yet been established. Due to these and other uncertainties, a quantitative response to this question cannot be made. However, one would expect that the relatively small increase in emissions (i.e., when compared to a regional inventory of NO_v emissions) would result in an insignificant effect on acid rain.
- EOEA-12 The possible need for monitoring ground water beyond the one-year post conversion period will be addressed in the final Gibbs & Hill hydrogeologic report. Ground water monitoring is required by DEQE as a condition of the Subsurface Discharge permit. Using both this permit and the MOU, the state of Massachusetts has authority to require long-term monitoring if the need is apparent.
- EOEA-13 NUSCO has committed to offsite disposal of ash. No further floodplain encroachment beyond the 103 acre-feet of Phase I development will occur.

4.0 LIST OF PREPARERS

U.S. DEPARTMENT OF ENERGY, ECONOMIC REGULATORY ADMINISTRATION, OFFICE OF FUELS PROGRAM, FUELS CONVERSION DIVISION

Name	Education	Expertise	to EIS
Steven E. Ferguson	BS/ME, JD	Chief of Environmental Branch, DOE Program Manager; direction and management of environmental evaluation of conversions	Director of DOE environmental staff and envir- onmental con- tractor
Lynda H. Nesenholtz	BS/JD	Section Chief, Environmental Branch	Mt. Tom Project Director, Draft EIS
Anne H.D. Randolph	ВА	Environmental Protection Specialist	Mt. Tom Project Director, Final EIS.
	DAMES &	MOORE, CONSULTING ENGINEERS, ATLANTA, GEORGIA, RIME CONTRACTOR TO DOE	
N	Education	Processie	Contribution
Name	Education	Expertise	
Ronald E. Kear	B.S., P.E.	Dames & Moore Partner; management of multidis- cipline environmental studies	Program Director
G. Raymond Brown	Ph.D	Computer modeling; environ- mental regulations; meteoro- logy	Air Quality
Roger Dhonau	M.S.	Ambient air monitoring; water quality analysis; dispersion modeling	Review of Regula- tions
Donald R. Gibeaut	M.S.	Management sciences; soil mechanics	Engineering Analysis
David E. Hawkins	M.S.E., M.S.A.E.	Environmental engineering; project management	Technical Review Preparation of Final EIS
Frederic M. Kessler	Ph.D	Engineering acoustics	Acoustics
Albert K. Langley, Jr.	Ph.D	Terrestrial ecology; vertebrate biology	Biology
Katherin S. Makeig	B.S.	Ground water, geology	Ground Water
Cleone M. Rotan	A.M.	Geology; report coordination; management	Project Manager; Geology
Mar v in Smith	в.А.	Land use; demography; remote sensing	Sociocultural
Richard A. Urbanowski	B.S.	Civil engineering	Surface Water
Da v id K Williams	B.C.E	Geotechnical engineering	Engineering; Alternative Fuels

5.0 COORDINATION LIST

FEDERAL AGENCIES

Environmental Protection Agency Department of Interior Department of Commerce Department of State Department of Agriculture Department of Defense Department of the Army Department of Housing and Urban Development Department of Justice Department of Labor Department of Health and Human Services Department of Health and Human Services Department of Transportation Federal Energy Regulatory Commission Occupational Safety and Health Administration Office of Management and Budget Nuclear Regulatory Commission Department of Energy National Science Foundation Advisory Council on Historic Preservation

STATE AGENCIES

Massachusetts Department of Environmental Quality Engineering Massachusetts Executive Office of Environmental Affairs Massachusetts Office of Energy Resources Massachusetts Department of Environmental Management Massachusetts Department of Public Utilities Connecticut Department of Environmental Protection

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Private citizeus, local and regional agencies and organizations, and all others who requested copies of the EIS are also included in the distribution.

6.0 ARCHAEOLOGICAL REPORT ARCHAEOLOGY RESEARCH MONOGRAPHS

FEASIBILITY STUDY MOUNT TOM COAL RECONVERSION PROJECT HOLYOKE, MASSACHUSETTS

Prepared for Northeast Utilities Corporation

Public Archaeology Survey Team c/o Department of Anthropology University of Connecticut Storrs, Connecticut 06268

Kevin A. McBride Mary G. Soulsby

Introduction

The Public Archaeology Survey Team, Inc. (P.A.S.T.) conducted a feasibility study of the Mount Tom Coal Reconversion Project areas for Northeast Utilities Corporation. The purpose of the feasibility study was to make a limited assessment concerning the area's archaeological sensitivity with respect to any proposed land modifications. The results of the study follow.

Research Design

The feasibility study consisted of 1) a brief review of previous archaeological work in the area to determine the existence of any previously known sites in the project area; and 2) fieldwork, including surface walkovers and subsurface investigation.

An examination of the site files of the Massachusetts Historical Commission suggested the existence of two prehistoric sites within the project area. Thus, our research design was formulated to 1) confirm or deny the existence of the two sites within the project area; and 2) test subareas of potential archaeological sensitivity based upon environmental criteria; and 3) assess degree of disturbance relative to archaeological remains in areas previously disturbed.

Methodology

<u>Known Sites</u>. According to the site files of the Massachusetts Historical Commission, there are two prehistoric sites located on the west bank of the Connecticut River within the project area. Site 19-HD-14 is described as a Woodland Period occupation, located at the mouth of a small brook (on the southern side) flowing out of Kennedy Pond on the bank of the Connecticut River. Pottery sherds, flakes, and several artifacts were reportedly recovered. Site 19-HD-15 was recorded in 1968 and is located south of Site 19-HD-14 along the river bank. Burials are said to have washed out of the bank at this site.

To confirm the existence of these two sites within the project area, P.A.S.T. first conducted a surface walkover and visual examination of the river bank within the project area. The walkover yielded no prehistoric cultural material P.A.S.T. then placed a transect (Transect 1) north-south along the river bank from Kennedy Pond Brook southward to the project limit, to facilitate subsurface testing. Test pits were placed along the transect at 20 meter (60 foot) intervals. All test pits were of standard size: 50 centimeters square (1 1/2 by 1 1/2 feet) and one meter (3 feet). Test pits were hand dug with shovel and trowel, and all soil was screened through 1/4 inch mesh.

A total of nine test pits were placed along Transect 1 along the river bank to locate Site 19-HD-14. Approximately 75 meters (225 feet) between Pits 3 and 4 was eliminated from testing because of a flyash pile along the edge of the river bank.

To locate Site 19-HD-15, P.A.S.T. continued testing along Transect 1 toward the southern boundary of the project area (see map). Five additional test pits (nos. 10-15) were placed at 20 meter (60 feet) intervals with the exception of an area between Pits 11 and 12 which was eliminated due to the presence of an erosional feature and several fill deposits of 20th century garbage.

A second transect (Transect 2) was placed along the first knoll to the west of the river bank, approximately 50 meters (150 feet) west of Transect 1 in an attempt to determine the western extent of Site 19-HD-15 (see map). Five shovel test pits were excavated along this transect at 20 meter (60 feet) intervals.

<u>Areas of Archaeological Sensitivity</u>. The second phase of investigations involved examination of areas considered to be of high archaeological sensitivity. Research conducted elsewhere in the Connecticut River Valley has indicated that in floodplain areas aboriginal occupations are associated with the system of north-south oriented knolls of well-drained alluvial soils characteristic of these floodplains. Conversely, poorly drained areas between these knolls are generally devoid of artifacts and presumably prehistoric occupation, except for those deposited as a result of slopewash from the relatively higher knolls.

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The remaining portions of the project area not already tested or previously disturbed were divided into two separate strata, based upon the above considerations. Stratum I included areas of relatively higher relief and well-drained alluvial soils (knolls); Statum II included the valleys between the knolls. Transects 1, 2, and 3 were placed in Stratum I, and Transects 4 and 5 in Stratum II (see map). In addition to the standard test pits placed every 20 meters, four inch diameter cores were placed in the pits to a total depth of 2 meters (6 feet).

Although outside the area of immediate impact, the westernmost knoll in the floodplain was considered to be a likely area for prehistoric human occupation. This knoll was surface walked.

-3-
Disturbed areas. To assess the degree of disturbance in previously disturbed portions of the project area relative to archaeological potential, judgement test pits were placed in the borrow pit along the river bank and in the base of a recently constructed flyash basin. A third area, previously used as a dump, consisted of 20th century fill and midden deposits.

Results

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Subsurface testing along Transect 1 confirmed the existence of Sites 19-HD-14 and 19-HD-15. Of the nine test pits along the northern portion of the transect, seven produced artifactual material - flint and basalt flakes and aboriginal ceramic sherds. Pits 8 and 9 yielded no cultural material. Showel test pits 1 through 7 were located in the general area of Site 19-HD-14 as described in the Massachusetts Historical Commission site files. Site 19-HD-15 was also confirmed by test pits in the southerr portion of the transect. Pits 10 through 15 along the river bank yielded lithic chipping debris and bone.

Along Transect 2, basalt and slate fragments were found in the plowzone of Pit 2 and charcoal fragments at a lower depth. The test pits along the remaining three transects and in disturbed areas did not yield any additional prehistoric material.

Surface collection of the westernmost knoll, approximately 150 meters (400 feet) from the river bank, resulted in cracked quartz cobbles and fire-cracked rock.

-6-

Two historic structures were located in the archaeological investigation. One (Historic Structure 1) is located on the westernmost knoll (see map). This onestory, flat roofed building was burned relatively recently. Features of the building include structural ironwork on the west side of the building and evidence of machinery which required a roof vent. The eastern wall had a loading dock constructed of railroad ties attached. Historic Structure 2 is located 15 meters (40 feet) south of Pit 14 on Transect 1 (see map). No historic or prehistoric cultural material was associated with these structures.

Conclusions

Based upon the limited archaeological investigation, conducted within the Mount Tom Coal Reconversion Project area, the following conclusions can be drawn:

1) P.A.S.T.'s investigation confirmed the existence of Site 19-HD-14. No estimates on site limits are possible on the basis of the feasibility study. However, the investigation suggested that much of the site is probably under flyash and is presently inaccessible.

2) The existence of Site 19-HD-15 was also confirmed. No estimates of site size are possible based upon the limited work done, but it appears that the site extends no further west than Transect 2.

3) The two historic structures appear to date from the 20th century, and were probably associated with farming activities. Informants from the area confirmed this hypothesis. The structures are of no archaeological, historical, or architectural significance.

Recommendations

1) In terms of archaeological sensitivity, the river bank is obviously the most sensitive. Any construction here would clearly impact the prehistoric sites. Thus P.A.S.T. recommends that any activities be no closer to the river than Transect 2, a distance of approximately 60 meters.

2) The remainder of the project area, to the westernmost knoll, was not found to be sensitive with respect to prehistoric occupation. However, the test pits are only designed to detect prehistoric activity to a depth of one meter (3 feet). The supplementary four inch diameter soil augers <u>may</u> locate deeply buried cultural deposits, but the absence of material in these cores does not necessarily indicate the absence of prehistoric activity in the area. More deeply buried sites may exist. Thus, P.A.S.T. recommends that construction activity be limited to subsurface disturbance of only two meters.

3) Lastly, the 20th century historic structures are not significant. The proposed construction activities will have no impact upon these structures.

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Artifact Inventory List - Site 19-HD-14

Artifact Inventory List - Site 19-HD-15

Description	<u>Transect</u>	<u>Pit</u>	Depth	Description	Transect	Pit	Depth
l potsherd	1	2	75-80 cm	5 nail fragments	1	10	65-85 cm
l quartz flake	1	5	70 cm	l pipe stem	1		surface
l charcoal fragment	1	5	70 cm	4 nails	1	13	
l chipped granite pi	ece l	2	70 cm	2 brick spalls	1	13	0-50 cm
l quartz shatter	1	4	30-40 cm	7 glass fragments	-	13	0-50 cm
l quartz shatter	1	4	30-40 cm	tar paper fragment	1	13	0=00 cm
l mudstone flake	1	3	55 cm	l flint flake	- -	10	85-90 cm
l mudstone flake	1	3	55 Cm	l bone fragment	1	10	75-80 cm
l mudstone flake	1	3	55 cm	l flint flake	-	12	50-60 cm
l cork	1	6	35-75 cm	l flint flake	1	12	70-80 CM
l whiteware sherd	1	6	35-75 cm	l basalt flake	1	13	75-85 00
56 glass fragments	1	6	35-75 cm	l quartz flake	1	15	
4 coal fragments	1	7	25-30 cm	l granite flake	1		surface
l glass fragment	1	7	25-30 cm	l granite flake	1		curface
l ceramic fragment	1	7	25-30 cm	l granite flake	3		surface
l nail	1	5	25-35 cm	l granite flake	3		Surface
l glazed stoneware sherd	1	5	25-35 cm	l granite flake	1]4	8-20 cm
3 glass fragments	1	3	0-35 cm	l chert flake	1	14	60~70 cm
l bottle cap	1	3	0-35 cm	l fire-cracked rock	1	11	50-50 cm
3 rusty nails	1	3	0-35 cm	l granite flake	1	11	45 cm
1 whiteware sherd	1	3	0-35 cm	l basalt flake	2	2	0-25 cm
				l whiteware, blue transferprint sherd	2	2	0-30 cm
				l glass fragment	2	1	0-40 cm
				l whiteware sherd	2	1	0-40 cm

-10-

l glazed redware sherd 2 l 0-40 cm



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