DOCKET NO. 110 - AN APPLICATION OF RILEY ENERGY SYSTEMS OF LISBON CORPORATION, REGIONAL DISPOSAL SYSTEMS OF LISBON, INC., AND PHILIP C. ARMETTA FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE LISBON RESOURCE RECOVERY FACILITY, WHICH WOULD GENERATE ELECTRICITY BY MASS BURNING MUNICIPAL SOLID WASTE IN THE TOWN OF LISBON, CONNECTICUT.

Connecticut Siting

Council

February 5, 1990

ORIGINAL

### FINDINGS OF FACT

- 1. Riley Energy Systems of Lisbon Corporation (RESOL),
  Regional Disposal Systems of Lisbon, Inc. (RDSL), and
  Philip C. Armetta applied to the Connecticut Siting
  Council (Council) for a Certificate of Environmental
  Compatibility and Public Need (Certificate) to construct
  a 13 (net) megawatt (MW) electric generating facility in
  Lisbon, Connecticut, on March 15, 1989. (Record)
- 2. The application was accompanied by proof of service as prescribed by Connecticut General Statutes (CGS) section 16-501(b). (Record)
- 3. The Department of Environmental Protection (DEP) and The Council on Environmental Quality (CEQ) filed written comments with the Council pursuant to section 16-50j of the CGS. (Record)
- 4. The parties to the proceeding include the applicants and those persons and organizations whose names are listed in the Decision and Order which accompanies these Findings. (Record)
- 5. The Council and its staff made a public field inspection of the proposed site on August 9, 1989. (Record)
- 6. Pursuant to CGS section 16-50m, the Council, after giving due notice thereof, held public hearings on this application on August 9, 1989, beginning at 2:45 P.M. and continuing at 6:30 P.M.; on August 16, 1989, beginning at 10:25 A.M.; on August 17, 1989, beginning at 10:00 A.M.; on August 18, 1989, beginning at 10:00 A.M.; and on August 24, 1989, beginning at 10:00 A.M. All hearings were held in the auditorium of the Lisbon Central School, Lisbon, Connecticut. (Record)

# Project Description

- 7. The proposed facility would be designed, constructed, and operated in accordance with all applicable local, State, and federal laws and regulations. (RESOL 1, p.15, 30)
- 8. The proposed facility would be a 15 MW (gross), 13 MW (net) electric generating plant consisting of two boilers which would mass burn municipal solid waste as fuel. Steam from the boilers would be fed into a single turbine generator to produce electricity. (RESOL 1, pp.1, 10, 15, 27)
- 9. The electricity generated by the proposed facility would be purchased by the Connecticut Light and Power Company (CL&P) under a 25-year contract. The contract would be executed prior to facility operation. (RESOL 1, p.1, 27; RESOL 22, p.1)
- 10. With proper maintenance, the useful life of the proposed facility would be in the order of 40 years. (RESOL 2, Q.11)
- 11. RESOL, a wholly owned subsidiary of Riley Consolidated, Inc., which is a subsidiary of Ashland Oil, Inc., would design and provide complete turnkey construction, along with long-term operation, maintenance services, and operating guarantees. (RESOL 1, p.3, 54, 61, 68)
- 12. RESOL would be responsible for providing labor, services, and supplies to operate and maintain the proposed facility throughout the 25-year Service Agreement. (RESOL 1, p.57)
- 13. Riley Stoker, an affiliated company of RESOL, would be responsible for the design, fabrication, erection, start-up, and commissioning of the steam generator. (RESOL 1, p.63)
- 14. By licensing agreement with Itoh Takuma, Riley Stoker would design, fabricate, and deliver the grate components of the boiler. Riley Stoker would also design and procure the remaining chute to stack items such as the scrubber/baghouse, ash handling system, continuous air emissions monitors, control systems, and stack. (RESOL 1, p.63; Tr. 8/9/89, p.49)
- 15. Philip C. Armetta is President and principal stockholder of RDSL and Regional Landfill Development of Lisbon, Inc. (RLDL). (RESOL 1, p.53)

- 16. RLDL would provide project development management, ash landfill operation, transfer station development, and hauling services. (RESOL 1, p.63)
- 17. The proposed facility would be located on property owned by Philip C. Armetta. (RESOL 1, p.110)
- 18. The communities that would participate in the proposed facility would form a public Authority which would own the facility. This Authority would be empowered under State law to issue the necessary bonds to finance the proposed project. (RESOL 1, p.9; Tr. 8/9/89, pp.36, 36-37; Tr. 8/24/89, p.25)
- 19. Property taxes and contract payments to the Town of Lisbon by Philip C. Armetta would be at least \$1 million per year. If property taxes were in excess of \$1 million, no contract payment would be made. (RESOL 2, Q.42, Attachment 6, p.7; Tr. 8/16/89, pp.139, 141-142)
- 20. The public Authority would be able to take advantage of tax-exempt bonding to finance the proposed project. (Tr. 8/9/89, p.36)
- 21. The proposed project would consist of the proposed facility and a recycling drop-off center that would be intended solely for the Town of Lisbon. An ash monofill to serve the facility would be located adjacent to the site. (RESOL 1, p.18, 24, 124)
- The participating communities would provide the proposed facility with the MSW needed to operate it under a put or pay obligation in accordance with an Annual Acceptance Commitment and with Weekly Acceptance Commitments. The communities would also enter into contracts for transport of ash and MSW, for ash disposal in the ash monofill, and for disposal of by-pass MSW at a landfill. (RESOL 1, p.62)
- Once 425 tons per day (tpd) of MSW were committed to the proposed facility, the project would proceed to financing and construction. (RESOL 16, Q.29; Tr. 8/9/89, p.180; Tr. 8/17/89, p.236)
- The proposed 500 TPD facility could serve a population of approximately 330,000 persons. (CCOL 11, p.10, 11)

#### Need

The project would serve three crucial public needs: 1) the need for electricity; 2) the need for solid waste disposal; and 3) the need to conserve natural resources. (RESOL 1, pp.19, 20, 23-24, 27, 123)

- The project would displace the reliance upon approximately 180,000 barrels of oil per year which would help achieve the goals of the State Energy Policy Act by reducing dependence on imported fuels and utilizing a renewable domestic energy resource. (RESOL 1, p.20, 21, 27, 123; DEP Comments of 8/4/89, pp.1, 2; Tr. 8/17/89, pp.242, 243)
- The proposed facility would utilize a renewable domestic energy resource, would diversify the State's energy supply mix, and would replace energy resources vulnerable to interruption with those less vulnerable. This is in accordance with the State Energy Policy Act as set forth in CGS section 16a-35k. (RESOL 16, Q.7; DEP Comments of 8/4/89)
- 28. Southeastern Connecticut is the least and Southwestern Connecticut is the most desireable area to add new electric generating resources in the State. (Tr. 8/18/89, pp.9, 23)
- 29. The transmission system of Southeastern Connecticut can accommodate a maximum of 300 MW for new generation during a major line outage. Under normal operating conditions, Southeastern Connecticut can accommodate a maximum of 800 to 900 MW of new capacity. (Tr. 8/18/89, pp.12-13, 16, 17, 20, 31)
- 30. The need for the proposed facility is supported by the Connecticut Solid Waste Management Plan in that the volume reduction of the solid waste stream dedicated to the proposed facility would minimize use of landfill capacity needed for final disposal of solid waste.

  (RESOL 1, p.23; DEP Comments of 8/4/89, p.1)
- 31. Without the proposed project, few options are available to the communities that currently have an immediate and future need for long-term solid waste disposal. (RESOL 1, p.23)
- 32. The proposed project would allow participating communities to minimize and virtually eliminate landfilling of unprocessed MSW. (RESOL 1, p.23)
- 33. The proposed facility would be consistent with the goals of Environment/2000. (DEP Comments of 8/4/89, p.1)
- On an average daily basis, currently 4,709 tpd of MSW is being processed or will be processed by existing resource recovery facilities in the State including the facility under construction in Preston. According to the DEP draft Solid Waste Management Plan of September 1988, after recycling 25 percent of the total MSW from the waste stream, 977 tpd remains in the State for which no capacity exists. (RESOL 1, p.25; RESOL 23, p.3)

- 35. Both the Preston Resource Recovery Facility and the proposed facility would be located within New London County approximately nine miles apart by road and geographically separated by 7.5 miles. (CEQ Comments of 8/1/89; Tr. 8/9/89, pp.82, 85, 96, 116, 124, 131)
- 36. The DEP must issue a preliminary Determination of Need in accordance with Public Act 89-386, or a finding to the contrary, within 60 days of the date when the Solid Waste Facility Permit application is judged to be complete. In seeking the Determination of Need the applicants would have to assure the DEP that 1) excess resource recovery capacity was not being created by the proposed facility; 2) waste tonnage estimates for the facility justified its construction; and 3) waste projections were firmly committed to the plant and incorporated waste stream reduction attributable to recycling through Public Act 89-386. A final written Determination of Need, if such finding were made, would be issued simultaneously with the Solid Waste Facility (DEP Comments of 8/4/89, pp.1-2, 4) Permit.

# Facility and Process Description

- 37. The proposed facility would consist of two nominal 250 tpd waste-to-energy trains utilizing the Riley-Takuma mass-burn system. (RESOL 1, pp.15, 41, 139)
- 38. The stoker system would be a Takuma reciprocating, inclined grate system. One grate section would be for drying and ignition, one for combustion, and the third for burnout. (RESOL 1, p.131, 135)
- 39. The proposed facility would process an average of 155,125 tpy of MSW with an average Btu value of 5,200/pound on the minimum proposed annual facility availability of 85 percent. (RESOL 1, pp.15, 41; RESOL 22, p.1; RESOL 40; Tr. 8/24/89, p.85)
- 40. The proposed facility would be designed to accommodate a third 250 tpd waste processing train for a processing capability of 750 tpd (nameplate). (RESOL 1, pp.15, 55)
- 41. High-pressure/high-temperature steam would be utilized by the proposed facility, which would produce approximately six percent more electricity than low-pressure steam. (RESOL 1, p.55; RESOL 2, Q.39)
- The proposed facility and associated equipment would be contained in eight areas: the tipping area; refuse pit; boiler housing; turbine area; administration and service area; switchyard; air pollution control and stack area; and scale house with two scales, which would be a separate structure located on the internal road network. (RESOL 1, pp.124, 126)

- 43. The proposed main facility structures would be a 115-foot by 45-foot by 27-foot deep refuse pit and a 138-foot by 131-foot by 186-foot high main facility building. (RESOL 1, p.124, 129, Exhibit II, Drawings M-1, M-2, A-2, A-3)
- 44. An 18,000 gallon propane tank would be utilized to store a maximum of six days of auxiliary fuel. A local supplier would be utilized for deliveries. (RESOL 1, p.140; RESOL 2, Q.75)
- 45. A closed circuit television system would be provided for the monitoring of activities throughout the proposed facility. Cameras would be installed in such areas as the entrance, scale house, tipping floor, refuse pit, charging hoppers, furnace boilers, and refuse handling area. Selected monitors would be located in the scale house, control room, plant manager's office, and crane pulpits. (RESOL 1, p.37)
- 46. A proposed 600,000 gallon water storage tank would be 58 feet in diameter by 30 feet high and would provide storage of water for fire protection at a flow of 3,000 gpm for three hours duration. (RESOL 2, Q.34; RESOL 6, p.2)
- 47. The tipping building would have enough room to queue approximately eight tractor trailer trucks for simultaneous unloading. (RESOL 1, p.126, 129)
- The refuse storage pit would be designed to hold a minimum of four and one-half days of MSW fuel for the two 250 tpd combustion units. This time would drop to three days if a third 250 tpd waste stream were added in the future. (RESOL 1, pp.47, 130)
- 49. The refuse feed system would include two overhead refuse cranes with orange peel grapples capable of handling 750 tpd of solid waste each. (RESOL 1, pp.47, 130)
- The refuse cranes, operated from a remote pulpit, would mix the refuse and transfer it from the pit to the charging hoppers. One crane would normally be used to keep tipping bays cleared and combustion units properly charged, with the other crane available on standby. (RESOL 1, p.131)
- MSW in the refuse pit would be continuously mixed and stockpiled. Vector (organisms which transmit pathogens) habitat would be continuously disturbed on a daily basis. The outside surface of the stockpile would not be exposed for more than a single day. Vectors which might hatch deep inside the stockpile would die due to anaerobic conditions, limited food, and lack of mobility. (RESOL 1, p.224)

- 52. The refuse cranes would be capable of removing non-processible items from the waste pit and, in an emergency situation, could remove all MSW from the refuse storage pit. (RESOL 1, p.131)
- The refuse feeder would be designed so that the feeding rate could be varied according to the quality and quantity of waste burned. There would be no direct air supply to the feeder grate, which would provide protection against burn-back into the feed chute. (RESOL 1, pp.42-43, 132, 135)
- 54. The boiler system would draw all combustion air from above the refuse pit and into the boilers which would prevent odors from escaping into the atmosphere. (RESOL 1, pp.35, 130, 136, 223)
- 55. The boiler would be designed for a minimum flue gas retention time of one second at a minimum mean temperature of 1800 degrees F. (RESOL 1, p.140)
- The high steam temperature zones within the boiler would be designed with INCOLOY material. INCOLOY has higher resistance to corrosion than standard material selections for boilers. (RESOL 11, p.2; RESOL 26; Tr. 8/9/89, pp.195-196, 197)
- The boiler would be enclosed by a system of water-cooled, welded tube walls. This water-cooled furnace envelope would constitute the principal steam generating surface and would be sized to cool combustion products to the appropriate furnace exit temperature. (RESOL 1, p.139)
- An auxiliary fuel burner would be installed in the refractory area of each furnace above the overfire air nozzles. These burners would be used for preheating during start-up, temperature control during operation whenever the mean furnace temperature dropped below 1500 degrees F at the point one second downstream of the overfire air injection, and temperature maintenance during shutdown. (RESOL 1, pp.140-141)
- 59. The auxiliary burners would be capable of maintaining the combustion gas temperature to a mean of 1800 degrees F for a minimum retention time of one second. (RESOL 1, pp.140-141)
- 60. Makeup water introduced to the condenser hotwell would be demineralized. (RESOL 1, p.145)
- 61. Each steam generator would contain a superheater designed to produce steam at 865 psig and 830 degrees F compatible with the turbine and efficient generation of electricity. (RESOL 1, p.137)

- The proposed facility would be constructed with a steam turbine-driven electric power generator designed to operate as a straight condensing unit with three uncontrolled extractions for feedwater heating in the deaerator and two heaters. The turbine and auxiliaries would be designed for continuous operation 365 days a year. (RESOL 1, pp.144-145)
- 63. In the event of a turbine generator outage or slow-down, a bypass condenser would condense the full steam output of the boilers, allowing continuation of incineration of MSW. (RESOL 1, pp.49, 146; Tr. 8/17/89, pp.71, 84)

## Site

- The proposed facility would be constructed on approximately 19 acres of an approximately 276-acre parcel owned by Philip C. Armetta in the Town of Lisbon, Connecticut. The site would be on the east bank of the Shetucket River, adjacent to Interstate 395 opposite the Taftville section of Norwich. Approximately 75 acres of the 276 acre parcel is the site of the proposed facility. (RESOL 1, pp.3, 15, 16, 72, 119, Exhibit G1 "Description of Land Owned by Philip C. Armetta", Exhibit Il "Site Boundary" Map; Tr. 8/16/89, pp.177-178, 179)
- 65. Ten public schools, seven of which are elementary schools, would be within a four-mile radius of the proposed site. (Tr. 8/9/89, p.110)
- of the 19 acres proposed to be developed, seven acres would be used for the facility site, and approximately 12 acres would be used for utilities, access roads, and the recycling center. A lined ash monofill would occupy 14.1 acres on approximately 64 acres of land owned by Philip C. Armetta to the north of the proposed facility site. (RESOL 1, pp.73, 167, Exhibit II "Site Boundary" Map; Tr. 8/9/89, p.170; Tr. 8/16/89, pp.177, 179)
- 67. Most of the proposed site is knobby with moderately steep to very steep topography. The most extensive area of steep slopes on the proposed site is located in the west-central portion bordering the Shetucket River. (RESOL 1, pp.72, 106)
- 68. The proposed site has had extensive erosion in the past due to its steep slopes. (RESOL 1, p.122)
- 69. Bedrock outcrops are located throughout the proposed site with the exception of the gravel pits at the northwestern corner of the site and at the proposed location of the facility just south of Interstate 395. (RESOL 1, p.82)

- 70. Elevation ranges from 30 feet to 256 feet above sea level on the 276-acre parcel. (RESOL 1, pp.16, 85, 106, Exhibit II "Site Boundary" Map)
- 71. Narrow strips of flat floodplain are located on the west side of the proposed site immediately adjacent to the Shetucket River. (RESOL 1, p.72)
- 72. Two former landfills are located within the proposed site. Both are small and were apparently used for residential wastes. (RESOL 1, p.83)
- 73. Two former sand and gravel mines, one at the north end of the site on which the proposed facility buildings would be located, the other at the south end near Connecticut Route 169, occupy the proposed site. Use of off-road vehicles in these areas has inhibited natural revegetation of the quarries. (RESOL 1, pp.85, 118)
- 74. There are two brooks and a small isolated pond on the proposed site. (RESOL 1, p.85)
- 75. Land abutting the 340 acres owned by Philip C. Armetta is predominantly residential. The highest concentration of residential homes adjacent to the property is along the southeastern border, ranging from about one-half mile to 1.1 miles from the proposed facility location. Other homes are scattered northeast of the proposed location from the facility across I-395 and across the River along Connecticut Route 97. The closest residences are about 1500 feet to the east of the proposed facility on Preston-Allen Road. (RESOL 1, pp.72, 104, 106, 110, 190)
- 76. The proposed site lies within the Town of Lisbon IP-1 zone; an Industrial Park District. The IP-1 zone provides for a wide range of uses including waste-to-energy, resource recovery, and recycling facilities for solid waste; lined ash landfills operated in conjunction with and adjacent to waste-to-energy or resource recovery facilities; and sixteen other categories of uses. (RESOL 1, pp.73, 74, Exhibit G1, Section 6, pp.9-10)
- 77. The balance of the IP-1 district on the 340 acres owned by Philip C. Armetta not utilized by the proposed project would be available for industrial development. Some of this acreage would be developed at a later date by RDSI for an industrial park. (RESOL 1, pp.73, 110)
- 78. Two CL&P transmission line rights-of-way and many dirt access roads are located on the proposed site. One CL&P right-of-way is 200 feet wide with an existing l15-kV line and the other is 125 feet wide and is not being used. (RESOL 1, p.85; RESOL 2, Q.55)

79. According to the DEP, the proposed site has good regional access from I-395, is relatively isolated from surrounding development and from sensitive noise and visual receptors, and has a potentially suitable ash disposal site on the property. (DEP Comments of 8/4/89, p.2)

# Site Selection

- The applicants' primary basis for site selection was to find a location suitable for the development of a long-term ash disposal area with GC or a GA/GA/GC groundwater designation. (RESOL 1, pp.83, 110, 114; Tr. 8/9/89, p.39; Tr. 8/16/89, p.117; Tr. 8/24/89, p.19)
- 81. The proposed facility building location on the proposed site was chosen by the applicants for the following reasons: 1) the proposed facility stands upon an old gravel pit which would allow relatively inexpensive excavation for foundations; 2) the nearby landfill would help keep ash disposal costs down; and 3) the location allows for an extensive natural buffer zone from residences. (RESOL 1, p.118)
- 82. There were no proposed alternative sites to the one proposed in the application. (Record)

### Historical and Archaeological Resources

- 83. The Public Archaeology Survey Team, Inc. (PAST), performed a Phase I Archaeological Reconnaissance Survey on the portion of the proposed site that would be directly impacted by the proposed facility construction. The area of study included the length of the access road, the facility proper, and the ash landfill area north of the site. (RESOL 1, p.80, Exhibit G4)
- 84. Subsurface Phase I investigations located two areas of historical interest, which PAST designated as Sites 73-5 and 73-6. (RESOL 1, p.81)
- 85. Site 73-5, located in the far southern end of the property, was probably a dump site containing domestic and industrial artifacts from the late Nineteenth through the Twentieth Centuries. This site did not possess the potential for yielding information of significance regarding Connecticut's archaeological heritage, and was not eligible for the National Register of Historic Places. (RESOL 1, p.81, Exhibit G4; RESOL 8, p.1)

- 86. Site 73-6 is about 600 feet east of the proposed facility and 30 feet east of the proposed access road. This site was probably an eighteenth or nineteenth century farmstead and contains a stone foundation and stone walls, as well as several artifacts. This site also had a prehistoric component, identified on the basis of a single quartzite flake. (RESOL 1, p.81; RESOL 8, p.1)
- 87. The State Historic Preservation Office reviewed the Phase I Reconnaissance Survey Report by PAST and concurred with PAST's recommendation that Site 73-6 be subjected to an intensive Phase II survey. The subsequent Phase II PAST survey concluded that the site did not meet the criteria for nomination to the National Register of Historic Places. (RESOL 1, p. 81, Exhibit G4; RESOL 8, p.1)
- There is a federal proposal to designate the Quinebaug and Shetucket Rivers within a National Heritage Corridor. This proposal is in draft form and is being considered for funding from the National Parks Service to implement a project feasibility study. Full funding for the study has not yet received approval. Final designation, if approved, would be about three to four years off. (RESOL 2, Q.60; RESOL 15, Q.7; Tr. 8/9/89, p.174)
- 89. The densely populated Taftville section of Norwich is designated as a National Historic District. This Taftville/Ponemah Mills Historic District was listed in the National Historic Register in 1978. (CCOL 7, p.1; CCOL 13, p.1; RESOL 25, p.1)
- 90. The proposed site borders the Taftville/Ponemah Historic District on the east bank of the Shetucket River. (CCOL 7, pp.1, 3; RESOL 25, p.6)
- 91. Ponemah Mills, part of the Historic District, is on the west bank of the Shetucket River adjacent to the proposed site. (CCOL 7, p.3; CCOL 13, p.1; RESOL 25, p.6)
- 92. The Taftville/Ponemah Mills Historic District has buildings that were constructed starting in the year 1870 including 204 multi-family homes, 24 commercial buildings, two churches, one school, one park, and one recreation field. (CCOL 7, pp.1, 3; RESOL 25, p.4)
- 93. Access to the proposed facility south from I-395 on Route 97 would involve trucks traveling through 6,400 feet of the Historic District. (CCOL 7, pp.1, 3; RESOL 25, p.4; Tr. 8/17/89, p.205)

## Wetlands

- 94. There are four general wetland areas located on the proposed site: mixed hardwood/floodplain; hardwood swamp; mixed hardwood/stream belt; and open swamp. (RESOL 1, pp.92-93)
- 95. A large parcel of mixed hardwood floodplain exists just north of Connecticut Route 169 and immediately adjacent to the Shetucket River. The length of the area runs about 1500 feet north-south and 240 feet at its widest point. (RESOL 1, pp.92, 93)
- 96. There are several interior sections of hardwood swamp on the proposed site associated with streams and low-lying natural drainage areas. The largest of these areas is located in the center of the proposed site and is about 260 feet by 220 feet in size. (RESOL 1, p.92)
- 97. A mixed hardwood/stream belt wetland generally runs through the northern part of the site and borders the area south of where the proposed facility would be built. (RESOL 1, p.92)
- 98. An open swamp is located in the northwestern corner of the proposed site and adjacent to the Shetucket River. This location encompasses the largest continuous surface area of wetlands: 800 feet by 400 feet. (RESOL 1, p.93)
- 99. Three existing crossings of wetlands would be upgraded by construction activities: two due to crossing of the proposed facility access road and the third due to the crossing of the landfill access road from the facility. Natural drainage courses would be maintained in these areas. (RESOL 1, p.174)
- 100. The access road would cross the first wetland approximately 3,000 to 3,200 feet north of Route 169. This wetland, an intermittent stream channel, would be maintained by a pipe which would drain the upslope land to the east and also drain stormwater from the access road to the downstream wetlands located to the west of the access road. During construction, about 1,662 cubic yards of soil would be excavated from this wetland area with 831 cubic yards of clean riprap brought in for the lining of the channel. Approximately 1,636 cubic yards of clean fill would be brought in for grading of the The total fill area would be 0.71 acres. access road. This impact could not be avoided because the wetland drainage channel runs east-west along the entire width of the site and the access road would travel north-south. (RESOL 1, pp.174, 175, 176, Exhibit I1)

- 101. The second wetland is a stream channel that would be crossed by the access road in two separate areas approximately 6,660 feet and 7,000 feet from Route 169. Water flow would be sent through culverts and an open channel to maintain the natural drainage pattern. wetland is immediately east and south of the proposed facility footprint, flowing northeast to southwest. total excavation of soil required for this wetland stream channel construction and crossing would be about 2,824 cubic yards. Approximately 1,108 cubic yards of riprap would be brought in for the channel lining. Approximately 400 cubic yards of clean fill would be used for grading the access road at the northeastern crossing and 2,222 cubic yards would be used at the southwestern channel crossing. Areas of revegetation along the channel bank would be required for the aforementioned improvements. (RESOL 1, pp.175, 177, 178, Exhibit I1)
- 102. The final wetland is the open swamp located immediately west of the proposed facility location. facility/ash landfill access road runs northward, then cuts west through and around the swamp adjacent to I - 395.This area is generally flat and is within the 100-year floodplain. Grading for the access road would be less than 1.5 feet higher from what now exists. Freshwater drainage would have little change in volume flow since grading would not redirect stormwater away from the swamp. A total of 3,165 cubic yards of clean fill would be required to construct the access road across the wetland. The existing cross culvert beneath the existing gravel road through the open swamp would be replaced by two culverts whose invert elevation would equal the existing culvert in order to maintain the existing hydroperiod. (RESOL 1, pp.177, 179, 180)
- 103. The total acreage of the first two wetlands to be filled would be approximately 1.6 acres, and the third wetland would require fill on 0.3 acres. (RESOL 2, Q.57)

#### Site Construction

- 104. The applicants would minimize erosion impacts with the addition of check dams, swales, culverts, and riprap. Natural flows and discharges would be maintained while minimizing their effects to the environment. All exposed ground areas would be seeded to establish a stable vegetative ground cover. (RESOL 1, p.122, Exhibit H2)
- 105. Most construction bulk material such as asphalt, concrete, piping, wiring, and cable would be purchased within the greater Lisbon-Norwich area. Local union construction labor would be utilized. (RESOL 1, pp.122, 225)

- 106. A total of 225 workers would be employed during the peak construction period. (RESOL 1, p.226)
- 107. All building structures would be designed to conform with the requirements of the State of Connecticut Basic Building Code and pertinent seismic zone designations. (RESOL 1, p.127)
- 108. All building foundations would be above the groundwater table, and no dewatering of the soils would be necessary. (RESOL 1, pp.128, 172)
- 109. Archaeological Site 73-6 would not be affected during construction of the access road. (RESOL 8, p.1)
- 110. The proposed facility construction would eliminate about 12 acres of terrestrial habitat in the northern part of the site. A large portion of this area has already been disturbed by sand and gravel mining operations. The impact would be confined to successional forest and a small wetland area along the landfill access drive. (RESOL 1, p.173)
- 111. Facility construction would not eliminate any of the habitat types on the site. (RESOL 1, p.173)
- 112. RESOL would be responsible for the construction of the ash landfill access road up to I-395. RDSI would be responsible for the construction of the ash landfill access road from I-395 north into the ash landfill site. (RESOL 1, p.226)

#### Recycling Center

- 113. The drop-off recycling center would be located on the west side of the access road, approximately 575 feet north of the site access road entrance. It would encompass approximately 1/8 acres. (RESOL 1, p.18, Exhibit I1, drawing 3 of 50; RESOL 2, Q.1, Attachment 1; Tr. 8/17/89, pp.27, 28-29)
- 114. The drop-off recycling center would consist of an enclosed building containing separate bins for paper, glass, cardboard, and scrap metal. (RESOL 1, p.18)
- 115. The RESOL application does not offer recycling services to communities other than the Town of Lisbon as part of the proposed project. (RESOL 2, Q.1; Tr. 8/17/89, pp.21-22)

The proposed project, in conjunction and cooperation with the DEP, could develop a five-acre intermediate processing center on site. Riley has an agreement with New England CRInc. for the development of this center to help participating communities meet the 25 percent recycling requirements mandated for January 1991. This proposal is not part of the official application. (RESOL 10, p.2; Tr. 8/9/89, p.50; Tr. 8/17/89, pp.21, 23, 27, 30)

### Access Road

- 117. The proposed 30-foot wide access road would be constructed on a 50-foot wide right-of-way extending from Connecticut Route 169 northerly and running parallel with the Shetucket River for approximately 7500 feet to the proposed facility. (RESOL 1, pp.110, 119, 174; RESOL 2, Q.53)
- 118. Approximately 15 to 20 feet of clearing would be required on either side of the roadway except in areas of drainage outlets to provide for channel construction. (RESOL 2, Q.53)
- 119. Fill removed from the proposed facility excavations would be used to balance the contours along the proposed access road. (RESOL 1, pp.119, 120)
- 120. The existing access drive would continue from the proposed facility to just underneath I-395 next to the Shetucket River leading to the proposed ash monofill. (RESOL 1, p.120)
- 121. No right-of-way exists under I-395. However, the applicants would apply to the DOT for a permit to construct the access road under an existing I-395 bridge. The DOT would determine if the proposed access road were compatible with the existing I-395 highway. The proposed access road would also require the review and approval of the Federal Highway Administration. (CCOL 9, Letter of June 28, 1989, from James E. Lewis to George Pawlikowski; Tr. 8/9/89, pp.68-69)
- 122. The clearance under I-395 would be approximately 15 feet. (Tr. 8/9/89, p.70)
- 123. The landfill access road would serve as a means of transporting ash residue from the proposed facility to the proposed ash landfill site on the north side of I-395. (RESOL 1, p.120)
- 124. The proposed ash landfill access drive vertical grade is at or near the elevation of the existing access drive which is, in part, within the Special Flood Hazard Area and FEMA floodway of the Shetucket River. (RESOL 1, p.120)

125. Because the proposed facility does not lie in an area identified as a Stream Encroachment area, the DEP did not require a Stream Encroachment Permit. (RESOL 1, p.121, Exhibit Kl "Water Resources Letter Regarding Stream Channel Encroachment")

### Shetucket River

- The Shetucket River is designated as C/Bc. A "C/B" 126. designation means that the river may be used for certain recreational activities, agriculture, industrial, and other uses including navigation. However, swimming is usually precluded. The rating indicates that one or more Class B criteria or designated uses may be impaired, but it is the goal of the DEP to return this body of water to a B rating. The river is not currently meeting water quality goal criteria of one or more designated uses due to pollution. The "c" indicates that this area is suitable for cold water fisheries, including spawning, growth, and passage of anadromous (RESOL 1, p.97; Tr. 8/18/89, pp.163, 165) fish.
- 127. The ponded area of the Shetucket River next to the proposed facility (Taftville Pond) is not a designated area for Atlantic Salmon restoration because it does not have breeding habitat for the salmon. (RESOL 2, Q.59)
- 128. Taftville Pond is a nineteenth century mill reservoir on the Shetucket River between and adjacent to the site and the Ponemah Mill. (RESOL 1, p.85)
- 129. The 100-year flood elevation adjacent to the proposed facility is 48.5 feet. The 500-year flood elevation adjacent to the proposed facility is 64.5 feet. The floor of the proposed facility would be between 110-120 feet. (RESOL 2, Q.71)
- 130. Construction-related impacts to the Shetucket River system would be limited to installation of stormwater discharge points and sedimentation from site erosion. Construction of the stormwater discharge system would include construction at or below the waterline and would require disturbance of a small segment of riverbank which would generate short-term, localized turbidity. (RESOL 1, pp.181, 182)

# <u>Groundwater</u>

On-site wells for the site would be feasible for process water, but tests indicated that the water would not meet drinking water quality standards. These wells would be developed under applicable DEP permits if the negotiations for water service with the Norwich Department of Public Utilities (NDPU) were not successful. (RESOL 1, pp.83-84, Exhibit G5)

- 132. The southern portion of the 340-acre parcel has been mapped as a moderate yield aquifer by the DEP. This aquifer would not be affected by the proposed project. (RESOL 1, p.84)
- 133. A deep groundwater table was found at a depth of between 52 and 58 feet at the location of the proposed facility buildings. The groundwater table in the location of the access road is well below the ground surface along the entire path of the roadway. (RESOL 1, p.84)
- 134. Groundwater and surface water flow on the proposed site is west, toward the Shetucket River. (RESOL 1, p.95)
- 135. The western and northern areas of the proposed site are designated as GA/GA/GC. The remaining areas are designated as GA. (RESOL 1, p.95)
- 136. A GA/GA/GC designation means: 1) the existing water quality is presumed to be suitable for direct human consumption; 2) the area is not presently used for waste disposal; 3) the DEP's immediate goal is to maintain existing water quality; and 4) the potential or future use of the groundwater for purposes other than drinking water, such as a waste treatment process, is indicated by the GC designation. (RESOL 1, pp.97, 114; Tr. 8/16/89, pp.118, 120, 121, 171-172)
- 137. The proposed location for a domestic water well, should negotiations with the NDPU fall through, would be near the water storage tank on the southeast side of the facility location. The proposed locations for two process water wells would be near the access drive to the ash landfill. (RESOL 2, Q.87, Map "Site Utilities Water System Alternate")

# Electrical Details

- 138. The estimated amount of electrical generation to be sold to CL&P would be approximately 86,870,000 Kwh/year. (RESOL 1, pp.65, 145, 154)
- 139. The generating capacity of the proposed project would represent a fraction of a percent (0.0018) of NU's generating resources as of Winter 1988/89. (RESOL 1, p.21; Tr. 8/9/89, p.100)
- 140. The preferred electrical interconnection line would be located entirely on the site of the project, between the facility and an existing 115-kV transmission line which runs through the site. (RESOL 1, p.117, 154, Exhibit H1; Tr. 8/9/89, p.217; Tr. 8/16/89, p.70)

- 141. Electrical transmission equipment would include a substation/switchyard with required equipment and either a 23kV or 115kV interconnection line. (RESOL 1, pp.147, 154, Exhibit Hl p.1)
- 142. CL&P was unwilling to negotiate an above-avoided cost municipal rate for the proposed project. To avoid a contested proceeding before the DPUC, the applicant negotiated a lower rate. (RESOL 1, p.65; RESOL 13, p.1)
- 143. CL&P agreed to a front-loaded pricing arrangement of 8.85 cents per Kwh tentatively beginning on January 1, 1993, remaining fixed for the first three years, and escalating over the term of the 25-year contract based on the percentage of GNP necessary to pay the project 100 percent of CL&P's avoided costs over the term of the contract. Approval of this agreement is required by the DPUC. (RESOL 13, p.1; RESOL 22, pp.1, 2, 4; Tr. 8/16/89, p.106; Tr. 8/17/89, pp.37-38, 39-40, 83, 126, 152)
- 144. The tip fees for participating towns would be lower by approximately \$10.00 per ton under a municipal rate. (Tr. 8/9/89, p.72; Tr. 8/17/89, pp.122, 144)
- 145. CL&P would have the right to interrupt power at 50 percent of the plant's designed capacity for 1,000 hours per year. The project would have the right to preschedule 250 of these 1,000 hours. (RESOL 22, p.2; Tr. 8/16/89, p.102; Tr. 8/17/89, pp.47, 48-49, 72, 77; Tr. 8/24/89, pp.54-55)
- 146. Prior to January 1, 1993, if the proposed facility were generating electricity, CL&P would purchase it at their private facility 980 rate which is below avoided costs. (Tr. 8/17/89, p.61)
- 147. Ashland Oil Company would guarantee the finalized Electric Purchase Agreement. (RESOL 22, p.2; Tr. 8/17/89, pp.51-52, 53, 56, 161)
- 148. Ashland's energy guarantee would expose them to a maximum of \$17,855,000.00 based upon the maximum difference between CL&P's projected front loaded expenditures in excess of avoided costs under the negotiated Electric Purchase Agreement contract. (Tr. 8/17/89, pp.164-165)

# Water and Sewer

149. Water services under a five-year renewable contract and sewer services would be purchased from the Norwich Department of Public Utilities (NDPU). (RESOL 1, pp.15, 72, 148; Tr. 8/17/89, pp.179, 192)

- 150. Water and sewer utilities would consist of new piping systems which would connect the proposed facility with the NDPU's system across the Shetucket River via the Connecticut Route 169 bridge. Water piping would run under the access road on-site while sewer utilities would run under the access road to up to 60 feet east of the access road right-of-way near the southern end of the site. (RESOL 1, pp.17, 72, 148, Exhibit Il Drawings 27 through 34; RESOL 2, Q.16, Attachment 3; Tr. 8/17/89, p.198)
- 151. The existing demand on the Norwich water supply system is 4.5 mgd. When the Preston resource recovery facility comes on line in the early 1990's this demand would increase to 5.0 mgd. The proposed Lisbon facility would require 0.37 mgd on average and would further increase this demand to 5.37 mgd. The safe yield on the Norwich water supply system is 6.3 mgd (during a 100-year drought). (RESOL 6, p.1; RESOL 27, p.1; Tr. 8/17/89, pp.174-175, 178-179, 184-185, 189)
- The Norwich Sewage Treatment Plant (NSTP) has a dry weather treatment capacity of 8.5 mgd and a peak treatment capacity of 15 mgd during wet weather. The NSTP is currently receiving approximately 4.3 mgd. The proposed project would discharge 0.0189 mgd under normal operating conditions, which flow would not exceed the available capacity at the NSTP. (RESOL 6, p.1; RESOL 27, p.1; DEP Comments of 8/4/89, p.3; Tr. 8/16/89, p.14)
- 153. The proposed facility would generate approximately \$70,000 per year in water service income to the NDPU, \$43,000 in sewer use fees per year, and a lump sum payment of \$500,000 to aid in developing new water sources for the NDPU. (RESOL 6, p.1; Tr. 8/17/89, pp.175, 187)
- Domestic and process water wells would be used as backup during a 50 percent NDPU reservoir level or drought emergency conditions, or if the five-year contract with the NDPU was not renewed. The on-site domestic consumption well would have a safe yield of 1-2 gpm or 1,000 gpd. The two on-site process water wells would have a safe yield of 350 gpm or 500,000 gpd. The process water wells would have a two percent impact on the Shetucket River seven-day, ten-year low flow. (RESOL 2, Q.67; Tr. 8/17/89, pp.183-184, 192, 195)
- 155. The water service would include a 12-inch diameter ductile iron water main with an on-site 600,000 gallon water storage tank. The tank would provide system storage for a proposed fire fighting flow of 3,000 gpm for three hours. (RESOL 1, p.147; RESOL 2, Q.34)

- 156. An on-site pump station capable of meeting an average daily demand of 370,000 gpd and the fire flow requirement at a pressure of 120 psi would boost water pressure. (RESOL 1, pp.147-148)
- 157. The facility could be retrofitted for dry cooling if the five-year NDPU contract was not renewed. (Tr. 8/17/89, p.196)
- 158. Approximately 13 gpm of wastewater would be discharged to the sewer system. Wastewater would include cooling tower blowdown, demineralized boiler blowdown, sanitary wastes, and wastewater from floor drains. These wastewaters would flow through grease, grit, and oil traps and discharge to a 10,000 gallon wastewater settling tank. (RESOL 1, pp.35, 162, 164)
- 159. Proposed roof drains would carry rainwater to a stormwater drain system. (RESOL 1, p.35)
- 160. Wastewater would be conveyed by way of a ten-inch diameter P.V.C. sewer line. An intermediate pumping station would be used to take the sewage over a high-point in the access road and eventually to the Norwich Sewage Treatment Plant. (RESOL 1, p.162; RESOL 6, p.2; Tr. 8/17/89, p.198)
- 161. Recycling of some of the cooling tower and boiler blowdown waters would be used as quench water in the wet drag chain conveyor, within an ash discharger, and for lime slurry requirements of the scrubber system. The quenching water would not be discharged except as a constituent of the ash residue. (RESOL 1, pp.152, 162)
- The 10,000 gallon wastewater settling tank would be used to remove solids from floor drains, washdown water, filter backwashing, equipment drains, and the remainder of boiler and cooling tower blowdown discharges. A 150,000 gallon sanitary sewer equalization tank would be used during storm events to hold the wastewaters to ensure that the Norwich combined sanitary-sewer system would not be overloaded during these events. (RESOL 1, pp.152, 162, 164; RESOL 4, Q.77; RESOL 6, p.1)
- 163. The proposed facility's stormwater discharge would consist of stormwater runoff from five acres of paved area surrounding the facility. The runoff would be directed to a system of concrete catch basins and through two oil/water separators. This runoff would eventually combine with other runoff and then discharge to the Shetucket River. (RESOL 1, pp.186, 187, 188)

- 164. The catch basins and piping would be sized to handle runoff from both the paved facility area and the natural drainage of the 400-acre watershed. The storm water runoff from the proposed facility would increase the total watershed runoff by approximately ten percent. (RESOL 1, p.187)
- 165. The two 25-foot by ten-foot by five-foot concrete oil/water separators, with interior volumes of approximately 9,300 gallons, would remove floatables and additional suspended solids. These separators would treat the "first-flush" from storm events which typically has the highest concentrations of contaminants. (RESOL 1, pp.188-189)
- 166. Periodically oil and other floatables would be removed through a manhole located at the top of each separator. (RESOL 1, p.189)
- 167. At the end of each stormwater drainage outlet, the existing channel would be lined with riprap to eliminate erosion. (RESOL 2, Q.56; RESOL 5, p.2)

#### Cooling Tower

- 168. Cooling for the main and bypass condensers would be provided by a 76.4-foot by 26.3 foot, three cell, cooling tower. (RESOL 1, pp.146, 207, 214, Exhibit J1)
- 169. Scaling inhibitor, corrosion inhibitor, biocide, and dispersants would be added to the cooling water for treatment. (RESOL 1, p.147)
- 170. The circulating water flow rate would be 14,800 gpm with a drift loss rate of 0.005 percent (0.74 gpm). (RESOL 1, pp.214, 217, Exhibit J1)
- 171. A visible plume from the proposed cooling tower would rise more than 29.5 meters above ground approximately 207 days per year and would exceed 19.5 meters more than 295 days per year. The lengths of visible plumes would exceed 150 meters (distance to I-395) approximately 102.6 days per year. Plumes exceeding a length of 500 meters would occur an average of 27 days per year. Models indicated that no fogging or icing impacts would occur on the on-site substation area or on I-395. (RESOL 1, pp.216, 217, Exhibit J1)
- 172. The cost for the wet cooling system would be approximately \$20.96/ton tipping fee with energy revenues of \$49.56/ton. Cost of an alternate dry cooling system would be approximately \$29.70/ton tipping fee with energy revenues of \$47.44/ton. (RESOL 24, pp.2, 3)

173. The dry cooling system would reduce electrical output by ten to 12 percent and add \$1 to \$2 million to the project cost. (Tr. 8/9/89, p.209)

### Waste as Fuel

- 174. It is the intent of the applicants to contract with participating communities to secure MSW at a rate of approximately 425 tpd or 155,125 tpy. (RESOL 2, Q.86)
- 175. Hazardous waste, explosives, certain liquid wastes, demolition debris, tires, white goods, motor vehicles and parts, recyclable materials, and certain other miscellaneous materials would be unacceptable as fuel at the proposed facility. (RESOL 2, Q.30, Q.32; Tr. 8/16/89, p.35; Tr. 8/17/89, pp.6-7, 25-26; Tr. 8/18/89, pp.86-87, 88, 89, 91-93)
- 176. A notice listing unacceptable waste would be posted at the facility entrance as well as distributed to every community and hauler. Vehicle inspections would be made by the scale operator and tipping floor attendant for hazardous and unacceptable wastes prior to dumping into the refuse pit. Once wastes were dumped into the pit, the refuse crane operator would inspect the load prior to feeding the waste into the boiler and remove unacceptable waste to the extent reasonably practicable. Television cameras located at the scalehouse, tipping bay refuse pit, and feed chute area, with monitors located in the control room, would also identify unacceptable waste. (RESOL 2, Q.30, Q.32)
- 177. On a periodic and random basis, RESOL would require vehicles to dump loads on the tipping floor and inspect them for unacceptable waste. If such unacceptable wastes were found, a violation report would be issued to the hauler, with copies sent to local and state officials. The hauler would be fined and eventually prohibited from using the proposed facility should additional violations be discovered. (RESOL 2, Q.30, Q.32)
- 178. The unacceptable waste would be separated from the rest of the load for subsequent removal and disposal. If hazardous or infectious waste were suspected in a load, State and local officials would be notified immediately. RESOL would isolate and contain the area and eventually handle and dispose of the waste according to proper procedures. (RESOL 2, Q.30. Q.32)

# Tip fees and City and Town Interest

- 179. The estimated tipping fee for the City of Middletown, including a \$10/ton fee for ash disposal, would be approximately \$66.00 in 1993. Adding hauling cost, transfer station operating and maintenance, administrative expenses, bypassed waste cost, and other adjustments, the total disposal cost per ton would be approximately \$80.00 in 1993. (RESOL 28, p.6; Tr. 8/16/89, pp.78, 87, 88; Tr. 8/17/89, pp.151-152, 155; Tr. 8/24/89, p.93)
- 180. Communities that have sent letters of intent include the following:

Community	Waste (TPD*)	Cumulative Waste (TPD*)	Distance from facility (miles)
Lisbon	8	8	0
Canterbury**#	8	16	10
Plainfield**#	29	45	10
Scotland#	3	48	12
Voluntown#	4	52	12
Colchester#	19	71	16
Sterling#	4	75	17
Hampton#	3	78	20
Marlborough#	11	89	24
Killingly**#	33	122	25
Pomfret**#	6	128	32
Stafford#	22	150	35
Middletown	114	264	35
Putnam**#	20	284	37
Thompson**#	19	303	40
<u>Branford</u>	<u> 56</u>	<u>359</u>	55
TOTAL	359	359	

\* assumes 25 percent recycling

\*\* member of the Northeastern Connecticut Regional Resource Recovery Authority (NECRRA) # municipality in the Northeast Wasteshed as identified in the July 1985, State of Connecticut Solid Waste Management Plan

(RESOL 1, p.2; RESOL 2, Q.2, Q.3, Q.9, Q.10; RESOL 17, Letters of Intent of 8/9/89 and 8/15/89; RESOL 30; RESOL 37; Tr. 8/9/89, p.35; Tr. 8/16/89, pp.77, 78, 88; Tr. 8/17/89, p.214; Tr. 8/24/89, p.12; July 1985, State of Connecticut Solid Waste Management Plan)

181. Communities that have expressed an interest in the Lisbon project other than those filing letters of intent include the following:

Community	Waste	Cumulative Waste	Distance from
	(TPD*)	(TPD*)	<pre>facility (miles)</pre>
Columbia#	8	8	16
Chaplin#	4	12	20
East Haddam	14	26	22
Brooklyn#	14	40	23
Coventry#	20	60	30
Haddam	15	75	35
Cromwell	25	100	40
Middlefield	9	109	42
Durham	12	121	42
Windsor Locks	60	181	52
<u>Derby</u>	<u>27</u>	<u> 208</u>	66
TOTAL	208	208	

- assumes 25 percent recycling
- # municipality in the Northeast Wasteshed as identified in the July 1985, State of Connecticut Solid Waste Management Plan

(RESOL 1, p.2, Exhibit B1; RESOL 2, Q.3, Q.21; RESOL 37; July 1985, State of Connecticut Solid Waste Management Plan)

- 182. No community is formally committed to send MSW to the proposed facility. (RESOL 15, Q.5; Tr. 8/9/89, pp.35, 36-37, 177; Tr. 8/16/89, p.82; Tr. 8/17/89, p.212)
- 183. Based on letters of intent from communities not presently committed to a resource recovery facility, approximately 27 percent of the facility's 425 tpd average daily capacity would be from the NECRRA. Approximately 40 percent would come from Middletown and Branford which are west of the Connecticut River. From a total of 567 tpd of potential waste from interested communities that have submitted letters of intent or interest, approximately 67 percent would be from communities that are 35 miles or greater from the proposed facility. (RESOL 1, p.2; RESOL 30; Tr. 8/24/89, p.13)
- 184. The DEP will only permit an additional 845 tpd for resource recovery facilities in the State. The 425 tpd Lisbon facility would leave 420 tpd remaining for future resource recovery, most of which is located in Western and South Central Connecticut. (CRRA 3, Q.1; DEP Comments of 8/4/89, p.1; Tr. 8/17/89, pp.217-218)

# Other Site Development

- 185. The 340-acre parcel could provide the siting of an industrial park in the future and thereby provide, in conjunction with the proposed project, an anchor for economic development to benefit the Town of Lisbon and the entire region. Industrial park plans have not been developed beyond the proposed project for the remainder of land remaining on the parcel. (RESOL 2, Q.45; Tr. 8/9/89, p.39)
- 186. No effort was made by the applicants to find potential users of steam or waste heat from the proposed facility. Plans for the future industrial park could offer potential customers for steam or waste heat generated by the facility. (RESOL 2, Q.4)
- 187. A boat launch yielding access to Taftville Pond and an eight-foot wide bicycle path would be developed by the applicants. The bicycle path would generally follow the existing access road. A portion of the site's river frontage would be offered to the Town of Lisbon Planning and Zoning Commission for public ownership. (RESOL 31; DEP Comments of 8/4/89, p.5; Tr. 8/9/89, pp.164, 165; Tr. 8/16/89, p.20)

#### Noise

- 188. The proposed facility would be designed to keep noise levels in the work areas within the standards established by OSHA and the Federal Department of Labor. (RESOL 1, pp.33, 233, 234-235)
- 189. Off-site noise from the proposed facility would be controlled to conform with local ordinances and State noise regulations. (RESOL 1, pp.34, 233, 234-235, 247, Exhibit G8)
- 190. Major noise sources during construction of the proposed facility would include tractors, bulldozers, and other heavy machinery. There would be no regular construction activities at night or during the weekend since construction would occur on a 40-hour, five-day per week basis. (RESOL 1, pp.232-233)
- 191. The major operational noise sources of the proposed facility would include the cooling tower and associated pumping systems, the induced draft fans, truck traffic, and the electric generating system. (RESOL 1, p.233)
- 192. The major existing sources of noise in the immediate area of the proposed facility site are roads and highways, most notably I-395, which travels along the northern boundary of the property directly adjacent to the proposed facility. (RESOL 1, p.106)

- 193. An ambient noise monitoring program was conducted along the perimeter of the proposed site during four consecutive days in October 1988. Measured noise levels were in compliance with the residential Class A standard except along I-395. (RESOL 1, pp.106-107, 108, 109)
- 194. Two on-site hills and an intervening valley, and much of the heavily forested surrounding land would serve as a natural sound barrier to the mostly undeveloped property beyond the limits of the site. (RESOL 1, p.106; DEP Comments of 8/4/89, p.2)
- 195. The following measures would be taken to control operational noise from the proposed facility:
  - a) Where required, noise limitations would be included in the specifications for equipment purchase;
  - b) Noise levels would be considered in the arrangement of plant components;
  - c) Sound absorption and transmission characteristics would be considered in material selection;
  - d) All safety valve and boiler steam vents would be silenced with noise attenuation devices; and
  - e) Ducted fans would be braced and/or insulated to minimize noise radiated through the ductwork. (RESOL 1, pp.34, 232, 234-235)
- 196. Connecticut State Regulations set a noise limit of 51 dBA (night) and 61 dBA (day) for the surrounding residential noise receptors. (RESOL 1, p.232, Exhibit G8)

#### Air Emissions

- 197. The proposed site is within the Eastern Connecticut Air Quality Control Region (AQCR 41). This region is in attainment for sulfur dioxide (SO2), nitrogen dioxide (NO2), particulate matter (PM), carbon monoxide (CO), and lead (Pb), and is not in attainment for ozone. (RESOL 1, pp.99, 196)
- 198. Based on 8760 hours per year of operation at 100 percent availability, the estimated annual worst case air emission rates after control would not exceed the following values in tons per year (tpy): PM, 29.8 tpy; SO2, 303.5 tpy; nitrogen oxides (NOx), 300.0 tpy; CO, 123.3 tpy; volatile organic compounds (VOC), 41.0 tpy; sulfuric acid (H2SO4), 19.0 tpy; and Hydrogen Chloride (HC1), 112.1 tpy. (RESOL 1, p.192; Tr. 8/16/89, pp.42, 185)
- 199. The DEP does not operate any continuous ambient monitoring equipment within AQCR 41. (RESOL 1, p.99)

- 200. The amount of carbon dioxide (CO2) emitted from the proposed facility would be approximately 190,000 tpy at 100 percent availability. (RESOL 2, Q.80)
- 201. The applicants' Maximum Allowable Stack Concentration (MASC) calculations for hazardous and toxic pollutants demonstrate that the facility would meet acceptable State and federal standards. (RESOL 1, pp.221, 222)
- 202. The proposed facility would be in compliance with all State and federal air quality standards. (RESOL 1, pp.207, 218)
- 203. The total dioxin impact from the proposed facility would be  $3.60 \times 10^{-9}$  micrograms per cubic meter which is below the Connecticut dioxin ambient standard of 1 x  $10^{-6}$  micrograms per cubic meter. (RESOL 1, p.203)
- The proposed facility would be considered a major stationary source of pollution under the Clean Air Act and would be required to obtain a Prevention of Significant Deterioration (PSD) permit. (RESOL 1, pp.196-197)
- 205. The proposed facility would consume approximately 15 to 16 percent of the air quality margin for NO2 and approximately 12 percent of the air quality margin for SO2 (annual averages) at the proposed site. (Tr. 8/16/89, pp.182-184, 205-206)
- 206. Modeling results of all PSD increment-consuming sources for SO2 and NO2 were below PSD increment limits. (RESOL 1, pp.203, 207, 208, 209)
- 207. Multiple source modeling for SO2 and NO2 showed that the multiple source impact would be below NAAQS for both pollutants. (RESOL 1, pp.203, 207, 210, 211)
- 208. Single-source lead (Pb) impacts from the proposed facility were predicted to be 0.05 micrograms per cubic meter on a quarterly basis (24-hour averaging). Adding this impact to the 0.75 micrograms per cubic meter background level resulted in a total impact of 0.80 micrograms per cubic meter which is below the 1.5 micrograms per cubic meter ambient air quality standard for Pb. (RESOL 1, p.203)
- 209. Continuous emissions monitoring would be performed for opacity, SO2, NO2, VOC, O2, CO, CO2, HC1, H2SO4, and PM. Steam load, total combined overfire and underfire air, temperatures in all combustion chambers, pressure drop across air pollution control devices, baghouse inlet temperature, and scrubber temperature would also be continuously monitored. (RESOL 2, Q.84; RESOL 17, p.4)

# Air Emissions Controls

- 210. The air pollution control system would include two spray lime slurry reactors (scrubbers), two baghouses, and two Selective Non-Catalytic Reduction (SNCR) systems. (RESOL 1, pp.156, 252; Tr. 8/16/89, pp.41, 211)
- The proposed facility would be the first resource recovery project in Connecticut to employ SNCR technology for the reduction of NOx emissions. This technology would be the Best Available Control Technology (BACT) for this pollutant. (RESOL 1, p.252; RESOL 2, Q.78; RESOL 3, p.2; Tr. 8/16/89, pp.41, 211)
- The gas scrubbing systems would include a common lime pebble storage silo and slurry tanks, lime slakers, slurry pumps, air compressors, piping, reaction chambers with a slurry atomization system, process controls, and other accessories. (RESOL 1, p.156)
- 213. Lime would be used by the scrubbers at a rate of 335 pounds per hour per boiler to control acid gases. The 12-foot diameter 55-foot high storage silo would be sized for a seven day storage for two combustion units running 24 hours a day. (RESOL 1, p.156; RESOL 2, Q.76)
- 214. The baghouses would be downstream of the scrubbers to collect particulate matter. The design would allow two of the six baghouse collection modules of each baghouse to be out of service for maintenance or cleaning while still supporting full operation of the facility.(RESOL 1, pp.48, 158)
- 215. The fabric filter bags in the baghouses would use a woven fiberglass bag treated with a teflon acid resistant coating. (RESOL 2, Q.79)
- 216. The fabric filter bags would be cleaned periodically by means of a pulse jet. Dislodged solids would drop into the ash hoppers for removal by the fly ash conveying system. (RESOL 1, p.158)
- 217. The baghouses would have a bypass for use during an emergency and to avoid condensation formation during start-ups. (Tr. 8/16/89, pp.48-49)

#### Stack

218. Good Engineering Practice (GEP) stack height for two-unit operation would be at 273.8 feet above ground level. GEP stack height for three-unit operation would be 328.3 feet ground level. Based on a ground elevation of 110.5 feet, the stack would be 438.8 feet above mean sea level because the facility would be designed for future third unit expansion. (RESOL 1, pp.165, 193, 200; RESOL 2, Q.83)

219. The stack would be made of concrete and have gas sampling ports and a testing platform. Continuous emissions monitoring equipment would be located in the stack and boiler exit to monitor stack emissions in accordance with applicable regulations. Exterior lighting would be incorporated to meet Federal Aviation Administration (FAA) requirements. (RESOL 1, p.165)

# Visibility

- 220. The proposed facility would be visible from I-395 in the vicinity of Exit 83. The proposed facility would also be visible from selected points of the west bank of the Shetucket River. (RESOL 1, pp.79, 118, Exhibit G3)
- Two on-site hills having elevations about 150 feet higher than the proposed facility's base elevation would help screen the facility from Route 169, southeast of the facility. (RESOL 1, p.106; DEP Comments of 8/4/89, p.2)
- The stack would be visible from various locations including I-395 for about two miles heading southbound in the vicinity of the site. The stack would be visible for about one mile traveling northbound on I-395. (RESOL 1, p.170)

# <u>Ash</u>

- 223. MSW volume would be reduced by approximately 90 percent into the form of ash. (RESOL 1, p.136)
- 224. An ash conveying system capable of handling both bottom and fly ash would be employed. The entire ash handling system, including controls and the ash pit, would be totally enclosed to contain ash dust. (RESOL 1, p.148)
- 225. The ash handling system would have a wet drag chain conveyor capable of handling grate siftings and fly ash from the scrubber/baghouse. Each unit train would have its own dedicated grate siftings and bottom ash system. The quenched ash would be discharged into an enclosed ash pit before disposal. (RESOL 1, pp.48, 148)
- 226. Bottom and fly ash would be combined and mixed in the ash pit by an ash crane. The ash crane would also load the ash from the ash pit into ash removal vehicles for hauling from the proposed facility. The enclosed ash pit would be designed for 72 hours storage generated by a three-unit facility. (RESOL 1, p.152)
- 227. An estimated 41,221 tpy (also cubic yards per year) of ash would be disposed of in the planned 14.1 acre lined ash landfill located adjacent to the site. (RESOL 1, p.1; RESOL 40)

### Ash Landfill

- 228. The adjacent ash landfill would only accept ash from the proposed facility and would be leased to the Authority. (RESOL 1, p.9; Tr. 8/9/89, p.79)
- 229. Other trash-to-energy ash producers would not be allowed to dispose of ash at the proposed ash landfill. (RESOL 2, Q.18; RESOL 16, Q.16)
- 230. The ash landfill would be located in an area that meets the proper hydrologic classification necessary for an ash landfill and would be entirely on a disturbed, abandoned sand and gravel mining operation. (RESOL 1, p.24; RESOL 2, Q.49)
- 231. The ash landfill would be constructed and operated in accordance with all current guidelines and regulations including proper lining, leachate detection and collection, leachate treatment, and cell closure.

  (RESOL 1, p.24)
- The proposed ash landfill would provide 640,000 cubic yards of capacity for approximately 13 years of plant operation, processing MSW at a rate of 425 tpd. (RESOL 2, Q.19; RESOL 16, Q.15; RESOL 40; Tr. 8/9/89, p.41; Tr. 8/24/89, p.19)
- 233. Before the proposed ash landfill were filled to capacity, project participants would seek additional ash disposal options including regional ash facilities proposed for development in Connecticut, disposal out-of-state, or expansion of the adjacent ash disposal site. (RESOL 2, 0.85)
- The ash landfill site was not recommended as one of the Statewide nominees for public acquisition and development because the amount of shallow bedrock on the site limits the capacity to less than a million cubic yards of capacity and therefore does not meet the criterion for Statewide and regional need. (RESOL 15, Q.8; RESOL 16, Q.12; Tr. 8/16/89, p.122)

# Testing

235. The proposed project would maintain a water treatment laboratory on site. There would be no laboratory analyses of incoming MSW performed either on or off site. Analyses would be performed on ash residue generated by the facility by an independent laboratory for moisture content, combustible content, heating value, putrescible content, EP toxicity, and corrosivity during the facility acceptance. (RESOL 2, Q.32)

236. Following the acceptance test, and during each month of the first six months of commercial operation, the DEP would take 24-hour composite samples of ash residue for analysis. Analyses for EP toxicity and actual metal content would be performed by the State Health Department. An analysis for dioxin would be performed by an independent out-of-state laboratory. (RESOL 2, Q.32)

# Fire Protection

- 237. A fire protection system would provide for fire detection and fire suppression for major buildings and other areas. The design of the system would meet or exceed the standards of all local and State fire codes and applicable National Fire Protection Association requirements. (RESOL 1, p.37)
- 238. The fire protection system would include the following:

  a) A yard loop of eight-inch diameter piping and hydrants;
  - b) Building standpipes and hose stations;
  - c) Sprinkler and deluge systems;
  - d) Halon 1301 Fire Protection Systems for the electric system and control room;
  - e) Portable fire extinguishers to be provided in all areas not protected; and
  - f) A 600,000 gallon aboveground water tank. (RESOL 1, p.38; RESOL 2, Q.34)
- The hydrant loop would encircle the main proposed facility area. Hydrants would be located along the entire yard loop at intervals of less than 350 feet. One hydrant each would be within 100 feet of the entrance and exit to the tipping building, and one would be within 100 feet of the scalehouse. (RESOL 1, p.38)
- 240. A system of standpipes and hose stations with one and one-half inch hoses would be provided for manual water fire suppression throughout the proposed facility, including the turbine generator building, the refuse pit, and the tipping building. (RESOL 1, p.39)
- 241. Sprinkling systems would be installed to protect the tipping hall, the turbine generator lubrication system, the baghouses, and the hydraulic units of the grates. (RESOL 1, p.39)
- The electrical and control areas would be provided with portable fire extinguishers. Fire walls, as required by local code, would be provided to separate the normally occupied work areas from the normally unoccupied equipment enclosure areas of the proposed facility. (RESOL 1, p.40)

# Security

- 243. Access to the proposed facility would be controlled by a six-foot high, chain link fence with a gate at the entrance to the proposed facility. The gate would be closed to prevent entry during non-delivery hours. (RESOL 1, p.128)
- 244. The proposed facility would be open to visitors representing regulatory agencies. All other visitors would be allowed on the site subject to prior approval by RESOL. All visitors would be accompanied by a representative of RESOL. (RESOL 1, p.128)

### Traffic

- 245. Regional access to the proposed facility would be by Interstate 395, Connecticut Route 97, and Connecticut Route 169. The applicants anticipate that 70 percent of the refuse trucks would approach the site from I-395 North, 24 percent from I-395 South, four percent from Route 169 South, and two percent from Route 97 South. Accordingly, 94 percent of the traffic would travel along Route 97 south from I-395. (RESOL 1, pp.101, 227, 228; Tr. 8/9/89, p.189)
- The Route 97 interchange of I-395 (Exit 83), located about 8,500 feet from the proposed site and 1.8 miles away in travel distance, would provide full access from I-395 for the proposed facility. The Route 169 interchange (Exit 83A) about two miles from the site, could provide access only to and from the south on I-395 and would not be used by facility traffic as it is further from the proposed site and prohibited by the Host Community Agreement with the Town of Lisbon. (RESOL 1, pp.101, 227)
- 247. Current daily traffic volumes on Interstate 395 range from about 25,000 per day west of interchange 83 to 20,000 east of the interchange 83A. Exit 83 services about 9,000 vehicles per day, and Exit 83A services 3,500 vehicles per day. (RESOL 1, p.102)
- 248. Route 97 runs through the Taftville section of Norwich and parallel with the Shetucket River. From Route 97 traffic would proceed to Route 169, across the Shetucket River, and finally to the site entrance. (RESOL 1, p.116)
- 249. Connecticut Route 97 has two lanes which together vary in width from 32 to 38 feet. It is generally illuminated and has speed limits of 30 and 35 miles per hour in the vicinity of the proposed site. The Route is curvilinear in nature and generally flat, except in one area where it has a steep grade. (RESOL 1, p.101)

- 250. Route 97's morning peak hour is between 7:30 and 8:30 a.m., with the afternoon peak from 4:15 to 5:15 p.m. The afternoon peak hour is higher in traffic than the morning and carries about 10 percent of the daily traffic. Truck traffic currently accounts for about four percent of the daily flow. Daily traffic volumes range from 6,000 to 8,000 vehicles with recorded volumes in 1979 and 1987 at 7,500 and 6,700 respectively. DOT data showed no extraordinary accident patterns over the past three years. (RESOL 1, p.101; RESOL 4, p.1; Tr. 8/17/89, p.206)
- 251. The daily traffic volumes along Route 97 after construction of the proposed facility would be less than traffic volumes were in 1979. (RESOL 4, p.2)
- 252. Connecticut Route 169 has two lanes which together vary in width from 24 to 34 feet in the vicinity of the proposed site between Route 97 and I-395. The speed limit is 30 miles per hour at the Route 97 end (near the proposed facility access road) and 40 miles per hour near I-395. Peak hours occur at the same time as along Route 97, and the percentage of truck traffic is approximately the same. Route 169 has a daily traffic volume between 2,500 and 3,000 vehicles. In the vicinity of the proposed site access road, daily volumes were 2,700 per day in 1987, a slight increase over the 2,300 counted in 1979. (RESOL 1, pp.101, 102; RESOL 4, p.1)
- 253. Capacity analyses were performed by the applicants at the Route 97/169 intersection and at the Route 169/proposed access drive intersection. Both locations were found to be able to accommodate the increased traffic, although the Route 97/169 intersection would approach the point where stop sign control would be no longer adequate. Signalization might be required in the future. (RESOL 1, pp.102, 116, 228)
- The applicant would create a left and right turn lane on Route 169 at the site access driveway to minimize delays for through traffic and provide room for deceleration. Geometric modifications would be performed on the existing channelizing island by the applicants at the Route 97/169 intersection. These modifications have been submitted for approval to the DOT. (RESOL 1, p.229, Exhibit G7; RESOL 2, Q.63; Tr. 8/9/89, p.66)
- 255. The majority of vehicles to and from the facility would be waste transfer vehicles averaging 60 trucks per day. The circulation pattern for the proposed facility would be designed to allow such vehicles to enter the site, weigh in at the scale house, discharge waste, and exit the site in approximately 15 minutes. (RESOL 1, pp.101-102, 226, 227; Tr. 8/17/89, p.207)

- Delivery trucks returning from the proposed facility to Middletown or Colchester would travel along a two-lane Norwichtown road to gain access to Route 2 from I-395. (Tr. 8/9/89, pp.189-190)
- 257. Because the ash landfill would be adjacent to the site, ash would not have to be hauled off-site, which would reduce truck traffic on public roads. (RESOL 1, pp.115, 227)
- 258. The anticipated daily traffic flow generated by the proposed facility would be in the order of 200 vehicle trips (100 vehicles) including traffic from employees but not including potential recycling center trucks. (RESOL 1, pp.226, 227; Tr. 8/17/89, pp.207-208)
- 259. Construction traffic would be expected to peak at approximately 150 passenger vehicles and light-duty trucks during the hour in which construction workers arrive and depart. The majority of the workers would arrive at the site prior to 8:00 a.m and leave prior to 4:00 p.m.. (RESOL 1, p.225)
- 260. Truck deliveries to the site during peak construction would be as many as 80 per day. (RESOL 1, p.225)

### Wildlife

- 261. There are no known populations of Federally Endangered and Threatened Species or Connecticut Species of Special Concern at the proposed site. (RESOL 1, pp.94, 181, 183, Exhibit G6, p.7, Exhibit K1)
- 262. No rare or endangered plants were observed during a site survey on the property. (RESOL 1, p.91)
- 263. No rare or endangered animal species were observed during a site survey on the property. (RESOL 1, p.91)
- Extensive tracts of Eastern Hemlock dominate the forest in many places through the site. Such forests are important winter refuges for deer and other wildlife. The impact in this area would be associated with clearing of the access road right-of-way and the building of the proposed bicycle path. To mitigate the loss of mature hemlock woodland, the proposed access road would be located 300 to 400 feet east of the Shetucket River, outside the area of the steepest slopes and densest hemlock cover. (RESOL 1, p.87; RESOL 5, p.2)

- 265. Connecticut Floral Species of Special Concern that were historically reported from the general vicinity of the proposed project include Creeping St. John's-Wort, Yellow-Fringed Orchid, Nodding Pogonia, and Alleghany Plum. No specific locational information on these species was currently available to the Natural Resources Center, and these species were not identified on-site. (RESOL 1, Exhibit K1)
- Possible habitat exists on the proposed site for the Yellow-Breasted Chat, a songbird listed as a Species of Special Concern by the DEP. Its presence was not found by site survey and is considered unlikely because this species is only known along coastal areas in Southeastern Connecticut. (RESOL 1, p.91; Tr. 8/16/89, pp.62-63)

### Permits and Approvals

- 267. On August 4, 1987, the proposed site was rezoned by the Town of Lisbon from Residential to an IP-1 Industrial Park. (RESOL 2, Q.44)
- The proposed facility has obtained inland wetlands and planning and zoning approvals from the Lisbon Conservation and Planning and Zoning Commissions for the construction and operation of the facility and adjoining ash landfill. The Lisbon Conservation Commission serves as the inland wetlands regulatory body for the Town. (RESOL 1, pp.1, 24, 73, 168, 174, Exhibit G2; Tr. 8/9/89, pp.41, 135)
- on December 6, 1988, is subject to 18 specific conditions. One of the conditions calls for 28 acres to be set aside for public recreation and open space, which is 10 percent of the IP-1 zone south of I-395.

  Approximately 75 acres were permitted for construction of the access road and facility to the south of I-395.

  (RESOL 1, pp.73, 76, 116, 255, Exhibit G1; Tr. 8/16/89, pp.177-178)
- 270. The Lisbon Conservation Commission granted a wetlands permit for the proposed facility to the applicants on August 23, 1988, and a wetlands permit for the proposed ash landfill on September 27, 1988. (RESOL 1, pp.121, 255, Exhibit G2)
- 271. The Host Community Agreement was accepted by a Town of Lisbon referendum on July 24, 1989. (RESOL 1, p.116; Tr. 8/9/89, pp.51, 53, 61; Tr. 8/16/89, pp.135-136)
- The proposed facility was determined to be a Qualifying Facility as determined by the Federal Energy Regulatory Commission (FERC) on February 21, 1989. (RESOL 1, p.14, Exhibit K1)

- 273. The applicants submitted a Nationwide Permit application to the Army Corps of Engineers in December 1988 for on-site disturbance to wetlands. (RESOL 1, pp.122, 249, 250, 251, 252)
- 274. The proposed site is not located in a coastal zone and therefore does not require coastal zone approval. (RESOL 1, pp.181, 183)
- 275. The FAA issued a Notice of Proposed Construction Permit to RESOL on January 9, 1989, due to the stack height greater than 200 feet in height. (RESOL 1, pp.249, 250, 251, Exhibit K1; RESOL 3, p.1)
- 276. An application for an Air Permit to Construct/PSD Review was submitted to the Air Compliance Unit of the DEP. The application was determined to be complete by the DEP in July 1988. The Air Compliance Unit has issued a draft permit for the proposed facility. (RESOL 1, pp.250, 252; RESOL 3, p.2)
- 277. An application for a Solid Waste Facility Permit was submitted to the Solid Waste Management Unit of the DEP in December 1988. (RESOL 1, pp.250, 253)
- 278. For discharge of process waters, an application to Discharge to the Waters of the State under CGS Section 22a-430 was submitted to the Water Compliance Unit of the DEP in January 1989. (RESOL 1, pp.250, 253)
- 279. For discharge of stormwater runoff, an application for a National Pollution Discharge Elimination System (NPDES) Permit was submitted to the Water Compliance Unit of the DEP in January 1989. (RESOL 1, pp.250, 253, 254)
- 280. A Stream-Channel Encroachment Permit was determined to be unnecessary by the Water Resources Unit of the DEP on October 7, 1988. (RESOL 1, pp.250, 254, Exhibit K1)
- 281. On May 23, 1989, the NDPU voted to execute the draft water supply contract with the proposed project. The finalized contract was pending NDPU signature as of August 9, 1989. (RESOL 2, Q.15; Tr. 8/9/89, p.205)
- 282. The applicants submitted an application of need to the DEP on July 13, 1989, as required by Public Act 89-386. (RESOL 23, p.1; Tr. 8/9/89, pp.65, 200)

# Facility Hours, Costs, Personnel, and Schedules

283. Proposed project costs are estimated as follows, in millions of 1989 dollars:

Site Preparation	\$	6.50	
Foundations		5.50	
Architectural/Structural		6.00	
Mechanical/Piping		18.00	
Boiler Chute to Stack		27.00	
Electrical/Instrumentation		3.50	
Engineering/Construction Management	t	5.00	
Spare Parts		1.50	
Start-Up		2.50	
Other		1.00	
FACILITY COSTS		76.50	
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(RESOL 1, pp.54, 55; RESOL 2, Q.37; RESOL 28, p.1)

- The construction price of \$76,500,000 includes the proposed recycling drop-off center and the proposed facility, but does not include the ash landfill. (RESOL 16, Q.22)
- 285. Construction costs include an oversized refuse pit, sizing of the cranes, stack height, inclusion of a third flue, and overall building orientation to allow a third combustion unit. (RESOL 1, p.55)
- Operation and Maintenance costs would be guaranteed by RESOL for \$4,675,000 (1989). This fee would be escalated according to an index to be agreed upon by parties involved which would reflect the inflation of RESOL's cost of operation. (RESOL 1, p.157; Tr. 8/24/89, pp.63-64)
- The construction of the proposed project would require over 500,000 man-hours of labor and would take approximately 30 months to reach commercial operations. The facility is expected to be operating commercially by January 1, 1993. (RESOL 1, pp.69, 70, 122, 225; RESOL 13, p.1; RESOL 22; Tr. 8/17/89, p.29)
- 288. The proposed facility would generally operate 24-hours per day, seven days per week. Each combustion/steam generating unit would be scheduled for shutdown twice a year at approximately six month intervals. These semi-annual shutdowns would be coordinated to coincide with anticipated periods of low refuse deliveries, low energy demands, and would employ a systematic procedure of inspection, cleaning, and maintenance. (RESOL 1, pp.30, 50)
- 289. The proposed facility would accept deliveries from 7:00 a.m. to 5:00 p.m., Monday through Friday, and 7:00 a.m. to noon on Saturday. Waste would not be accepted on Sundays or holidays. (RESOL 1, pp.30, 31, 128, 226)

- 290. A detailed training program for proposed facility operators would be implemented by Riley Stoker. (RESOL 1, p.63)
- The proposed facility would employ 39 people during operations. The staff would comprise administrative, maintenance, and operations personnel. (RESOL 1, p.122; RESOL 2, Q.31)

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