Recordkeeping burden. OMB invites public comment.

Dated: December 1, 2000.

John Tressler,

Leader Regulatory Information Management, Office of the Chief Information Officer.

Office of Educational Research and Improvement

Type of Review: New.

Title: Education Longitudinal Study of 2002 (ELS 2002).

Frequency: Annually.

Affected Public: Not-for-profit institutions; State, Local, or Tribal Gov't, SEAs or LEAs.

Reporting and Recordkeeping Hour Burden: Responses: 51,597. Burden Hours: 59,497.

Abstract: Year 2001 field test of 50 schools in five states, students, parents, teachers, and librarians. The main study in Spring 2002 in all 50 states and District of Columbia will constitute the baseline of a longitudinal study of school effectiveness and impact on postsecondary and labor market outcomes.

Requests for copies of the proposed information collection request may be accessed from *http://edicsweb.ed.gov,* or should be addressed to Vivian Reese, Department of Education, 400 Maryland Avenue, SW, Room 4050, Regional Office Building 3, Washington, D.C. 20202–4651. Requests may also be electronically mailed to the internet address OCIO_IMG_Issues@ed.gov or faxed to 202–708–9346. Please specify the complete title of the information collection when making your request.

Comments regarding burden and/or the collection activity requirements should be directed to Kathy_Axt at her internet address Kathy_Axt@)ed.gov. Individuals who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339.

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DEPARTMENT OF ENERGY

Record of Decision; JEA Circulating Fluidized Bed Combustor Project, Jacksonville, Duval County, FL

AGENCY: Department of Energy.

ACTION: Record of Decision.

SUMMARY: The Department of Energy (DOE) has prepared an environmental impact statement (EIS) (DOE/EIS–0289) to assess the environmental impacts associated with a proposed project that would be cost-shared by DOE and JEA (formerly the Jacksonville Electric Authority) under DOE's Clean Coal Technology (CCT) Program. The project would demonstrate circulating fluidized bed (CFB) combustion technology at JEA's existing Northside Generating Station in Jacksonville, Florida. After careful consideration of the potential environmental impacts, along with program goals and objectives, DOE has decided that it will provide approximately $73 million in federal funding support (about 24% of the total cost of approximately $309 million) to design, construct, and demonstrate the CFB technology proposed by JEA.

FOR FURTHER INFORMATION CONTACT: To obtain additional information about the CFB combustor project or the EIS, contact Dr. Jan Wachter, National Environmental Policy Act (NEPA) Document Manager, U.S. Department of Energy, National Energy Technology Laboratory, 626 Cochrans Mill Road, Pittsburgh, PA 15236, telephone: (412) 386–4809, fax: (412) 386–4726, or e-mail: jan.wachter@netl.doe.gov. For general information on the DOE NEPA process, contact Ms. Carol M. Borgstrom, Director, Office of NEPA Policy and Compliance (EH–42), U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585, telephone: (202) 586–4600, leave a message at (800) 472–2756, or fax: (202) 586–7031.

SUPPLEMENTARY INFORMATION: DOE has prepared this Record of Decision pursuant to Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (40 CFR Parts 1500–1508) and DOE NEPA regulations (10 CFR Part 1021). This Record of Decision is based on DOE's final EIS for the JEA Circulating Fluidized Bed Combustor Project (DOE/EIS–0289, June 2000).

NEPA Strategy for the Clean Coal Technology Program

For the CCT Program, DOE developed a strategy that is consistent with CEQ and DOE regulations for compliance with NEPA and which includes consideration of both programmatic and project-specific environmental impacts during and after the process of selecting a project. This strategy, called tiering (40 CFR 1508.28), refers to the consideration of general issues in a broader EIS (*e.g.,* for the CCT Program), followed by more focused environmental impact statements or other environmental analyses that incorporate by reference the general issues and concentrate on those issues specific to the proposals under consideration.

The DOE strategy has three principal elements. The first element involved preparation of a comprehensive Programmatic EIS for the CCT Program (DOE/EIS–0146, November 1989) to address the potential environmental consequences of widespread commercialization of each of 22 successfully demonstrated clean coal technologies.

The second element involved preparation of a pre-selection, project-specific environmental review of proposed CCT projects based on project-specific environmental data and analyses in accordance with DOE NEPA regulations (10 CFR 1021.216). For the proposed CFB combustor project, JEA supplied DOE with environmental data as part of their proposal. DOE reviewed the potential site-specific environmental, health, safety, and socioeconomic issues associated with the proposed project before selecting JEA's proposal for further consideration. In its review, DOE analyzed the environmental advantages and disadvantages of the proposal and alternative sites and processes reasonably available to JEA.

The third element consists of preparing site-specific NEPA documents for each selected project. For the JEA proposed project, DOE determined that an EIS should be prepared. As part of the overall NEPA strategy for the CCT Program, the JEA EIS draws upon the Programmatic EIS and pre-selection environmental reviews.

On November 13, 1997, DOE published in the **Federal Register** (62 FR 60889) a Notice of Intent to prepare the JEA EIS and hold a public scoping meeting. The Notice of Intent invited comments and suggestions on the proposed scope of the EIS, including environmental issues and alternatives, and encouraged participation in the NEPA process. DOE held the scoping meeting in Jacksonville, Florida, on December 3, 1997. DOE received 3 oral responses and 20 written responses from interested parties. The responses helped DOE to establish the issues to be analyzed in the EIS and the level of analysis warranted for each issue.

In August 1999, DOE issued the draft EIS for public review and invited comments on the adequacy, accuracy, and completeness of the EIS. As part of the review, DOE held a public hearing in Jacksonville, Florida, on September 30, 1999. DOE received 1 oral comment and 59 written comments, which helped to improve the quality and usefulness of the EIS. In June 2000, DOE issued the final EIS, which considered and, as

appropriate, incorporated public comments on the draft EIS. Among the issues raised in the comments were concerns about (1) reliability of CFB combustion technology in meeting expected air emissions rates for particulate matter, sulfur dioxide (SO_2), and oxides of nitrogen (NO_X), in view of limited large-scale operating experience; (2) air emissions of heavy metals, radionuclides, carcinogenic chemicals, and carbon dioxide (CO_2); (3) potential effects of cooling water discharge on the St. Johns River; (4) potential entrainment of juvenile sea turtles, such as endangered green sea turtles, in the cooling water intake; (5) potential effects on manatees and other endangered species; (6) potential effects on Essential Fish Habitat, such as estuarine emergent wetlands; (7) potential effects on cultural resources; (8) disposal of ash, including whether the planned ash marketing would be successful; (9) noise levels from construction, operation, and rail transportation; (10) electromagnetic fields; and (11) traffic congestion.

Project Location and Description

The site for the proposed project is located in Jacksonville, Florida, about 9 miles northeast of the downtown area, at JEA's existing Northside Generating Station. This 400-acre industrial site is situated along the north shore of the St. Johns River, approximately 10 miles west of the Atlantic Ocean. The local terrain is flat and there is a mix of industrial, commercial, residential, and agricultural land use in the vicinity. The industrial 1,650-acre St. Johns River Power Park borders Northside Generating Station to the northeast, and the 46,000-acre Timucuan Ecological and Historic Preserve borders the site to the east. Blount Island, located immediately to the southeast in the St. Johns River, is a major port with facilities for docking, loading, and unloading large ocean-going vessels. The most striking environmental feature associated with the area is the nearby presence of estuarine salt marsh backwaters of the St. Johns River.

Northside Generating Station, which currently employs 265 people, has operated since November 1966 when the 297.5-megawatt (MW) Unit 1 came on-line. The 297.5-MW Unit 2 and the 564-MW Unit 3 started operation in March 1972 and June 1977, respectively. Unit 2 has been out of service since 1983 because of major boiler problems associated with the volume of its furnace being inadequate to accommodate the heat generated. The Unit 2 steam turbine is currently idle and the Unit 2 furnace and stack have recently been dismantled and removed. Units 1 and 3 can burn both natural gas and oil [No. 6 fuel oil or No. 2 fuel oil (diesel)]. Units 1 and 3 have no air pollution control with the exception of low-NO_X burners on Unit 3. Once-through cooling water is withdrawn from and discharged into the St. Johns River. Existing facilities currently occupy about 200 acres of the 400-acre property. The property contains a number of wetland areas, especially in the perimeter areas.

The proposed project would repower the idle Unit 2 steam turbine to generate nearly 300 MW of electricity using a new coal- and petroleum coke-fired combustor to demonstrate CFB combustion technology. The new combustor would be located adjacent to the existing Unit 3. Piping and related infrastructure would be constructed to link the combustor with the Unit 2 steam turbine. The proposed project and related infrastructure would occupy about 75 acres of the Northside Generating Station property.

CFB combustion technology is an advanced method for burning coal and other fuels efficiently while removing pollutants from air emissions inside the sophisticated combustor system. CFB technology provides flexibility in utility operations because a wide variety of solid fuels can be used, including high-sulfur, high-ash coal and petroleum coke. In a CFB combustor, coal or other fuels, air, and crushed limestone or other sorbents are injected into the lower portion of the combustor for initial burning of the fuel. The combustion actually occurs in a bed of fuel, sorbent, and ash particles that are fluidized by air from nozzles in the bottom of the combustor. The air expands the bed, creates turbulence for enhanced mixing, and provides most of the oxygen necessary for combustion of the fuel. As the fuel particles decrease in size through combustion and breakage, they are transported higher in the combustor where additional air is injected. As the particles continue to decrease in size, unreacted fuel, ash, and fine limestone particles are swept out of the combustor, collected in a particle separator (also called a cyclone), and recycled to the lower portion of the combustor. This is the ''circulating'' nature of the combustor. Drains in the bottom of the combustor remove a fraction of the bed composed primarily of ash while new fuel and sorbent are added. The combustion ash is suitable for beneficial uses such as road construction material, agricultural fertilizer, and reclaiming surface mining areas.

The heated combustor converts water in tubes lining the combustor's walls to high-pressure steam. The steam is then superheated in tube bundles placed in the solids circulating stream and the flue gas stream. The superheated steam drives a steam turbine-generator to produce electricity in a conventional steam cycle.

The injected limestone could capture up to 98% of the sulfur impurities released from the fuel. When heated in the CFB combustor, the limestone, consisting primarily of calcium carbonate ($CaCO_3$), converts to calcium oxide (CaO) and CO_2. The CaO reacts with SO_2 from the burning fuel to form calcium sulfate ($CaSO_4$), an inert material that is removed with the combustion ash. The combustion efficiency of the CFB combustor allows the fuel to be burned at a relatively low temperature of about 1,650EF, thus reducing NO_X formation by approximately 60% compared with conventional coal-fired technologies. Greater than 99% of particulate emissions in the flue gas are removed downstream of the combustor by either an electrostatic precipitator or a fabric filter (baghouse).

In addition to the CFB technology, the proposed project would use a polishing scrubber in combination with the CFB combustor to attain a 98% SO_2 removal rate. The polishing scrubber is a conventional scrubbing system that would use lime in a dry flue gas desulfurization process downstream of the combustor to convert SO_2 chemically to calcium sulfite and calcium sulfate. It is called a polishing scrubber because the CFB combustor would remove 85–90% of the SO_2 and the polishing scrubber would remove or ''polish off'' the remainder. This design is driven by economic rather than technical considerations (*i.e.,* the CFB combustor alone could achieve a 98% SO_2 removal rate but the operating cost would be greater).

Another addition to the CFB combustion technology is that the proposed project would use a selective non-catalytic reduction system to further reduce NO_X emissions. Aqueous ammonia, the reagent for this system, would be injected into the CFB combustor exhaust gas to convert NO_X emissions to nitrogen gas and water via a chemical reduction reaction. Atmospheric emissions of ammonia can occur if the amount supplied to reduce NO_X in the flue gas is not used up (ammonia slip). However, excess ammonia in the stack gas can typically be reduced by optimizing the amount of ammonia that is injected. For the proposed project, stack emissions of

ammonia slip would not exceed 40 ppm.

A CFB combustor has several advantageous operating characteristics that differentiate it from more conventional technologies. Because the fuel and sorbent being added represent only a small fraction of the total fuel and sorbent available in the bed, the combustor reacts more slowly to variations in fuel or sorbent quality. Steam characteristics and furnace temperatures are more uniform, which usually results in easier operation, fewer upset conditions and emission spikes, and more consistency in the quality of combustion ash. As a consequence of bed fluidization and recycling of particles back to the lower portion of the combustor, enhanced mixing is achieved at more uniform temperatures, which allows more complete combustion and sorbent reaction. Another advantage of the combustor is the efficient transfer of heat due to the physical contact between the particles in the bed and the heat exchanger tubes in the walls. The technology also has lower operating and maintenance costs and a shorter ''down time'' for maintenance than conventional coal-fired technologies.

During the demonstration, Unit 2 would be operated on several different types and blends of coal and petroleum coke to explore the flexibility of the CFB technology. The coal would be transported by ship (from areas such as Columbia and Venezuela), by train (primarily from the central Appalachian region such as West Virginia and eastern Kentucky), and by a combination of train and ship (train from West Virginia and eastern Kentucky to Newport News, Virginia, and ship from Newport News to Jacksonville). The petroleum coke would be transported by ship from oil refineries in Venezuela and the Caribbean region. Limestone for the CFB combustor probably would be transported by ship from the Caribbean region and the Yucatan Peninsula of Mexico.

Alternatives

Congress directed DOE to pursue the goals of the CCT Program by means of partial funding of projects owned and controlled by nonfederal-government sponsors. This statutory requirement places DOE in a much more limited role than if the federal government were the owner and operator of the project. In the latter situation, DOE would be responsible for a comprehensive review of reasonable alternatives for siting the project. However, in dealing with an applicant, the scope of alternatives is necessarily more restricted because the agency must focus on alternative ways to accomplish its purpose that reflect both the application before it and the function the agency plays in the decisional process. It is appropriate in such cases for DOE to give substantial weight to the applicant's needs in establishing a project's reasonable alternatives.

Based on the foregoing principles, the only reasonable alternative to the proposed action is the no-action alternative, including three scenarios that could reasonably be expected to result as a consequence of the no-action alternative. Other alternatives that did not meet the goals and objectives of the CCT Program or of the applicant were dismissed from further consideration.

Proposed Action

The Department's proposed action is to provide approximately $73 million (about 24% of the total cost of approximately $309 million) for the design, construction, and operation of facilities to demonstrate CFB combustion technology at JEA's Northside Generating Station in Jacksonville, Florida. The new CFB combustor would use coal and petroleum coke to generate nearly 300 MW of electricity by repowering the existing Unit 2 steam turbine (the 297.5–MW unit that has been out of service since 1983). In doing so, the proposed project is expected to demonstrate emission levels of SO_2, NO_X, and particulate matter that would be lower than Clean Air Act limits while at the same time producing power more efficiently and at less cost than conventional technologies using coal. The proposed project would demonstrate CFB technology for electric power generation at a size sufficient to allow utilities to make decisions regarding commercialization of the technology.

In addition, JEA plans to repower the currently operating Unit 1 steam turbine without cost-shared funding from DOE. The Unit 1 steam turbine would be essentially identical to the turbine for Unit 2 and would be repowered about 6 to 12 months after the Unit 2 repowering. Although the proposed project consists of only the Unit 2 repowering (because DOE would provide no funding for the Unit 1 repowering), the JEA EIS evaluates the Unit 1 repowering as a related action.

JEA's management has established a target of a 10% reduction in annual stack emissions of each of 3 pollutants (SO_2, NO_X, and particulate matter) from Northside Generating Station (Units 1, 2, and 3), as compared to emissions during a recent typical 2-year operating period (1994–95) of the station (Units 1 and 3). Also targeted for a 10% reduction is the total annual groundwater consumption of Northside Generating Station, as compared to 1996 levels. These reductions are to be accomplished while increasing the total annual energy output of the station.

JEA, the project participant, is responsible for obtaining all applicable permits for the proposed project and would comply with all applicable laws, regulations, and ordinances. JEA plans to enter into a contract with Foster Wheeler Corporation, which would perform the design, engineering, procurement, and construction of the CFB combustor and air emissions control equipment. JEA and Foster Wheeler conceived and proposed the technology in response to the DOE solicitation under the CCT Program; DOE's role is limited to providing the cost-shared funding for the proposed project. In addition, DOE and JEA have different objectives to be attained through the proposed project: DOE's objective is to demonstrate CFB technology, while JEA's intent is to meet its future demand for electricity.

No Action

Under the no-action alternative, DOE would not provide cost-shared funding for the proposed CFB combustor project. The Programmatic EIS for the CCT Program (DOE/EIS–0146) evaluated the programmatic consequences of no action. Under the no-action alternative for the proposed project, three reasonably foreseeable scenarios could result.

First, JEA could repower the existing Unit 2 steam turbine without DOE funding, thereby accepting more of the financial risk associated with demonstrating the CFB combustor (at its own risk, JEA has in fact begun initial construction activities without DOE funding). JEA would also proceed with the related action of repowering Unit 1. Under this scenario, construction materials and activities and project operations would be the same as for the proposed project. The same amount of electricity would be generated. Fuel requirements would be similar except that the blend of coal to petroleum coke might be slightly different, particularly during the first 2 years of operation. Under this scenario, more of the solid fuel used could be petroleum coke.

Second, rather than repowering Unit 2, JEA could construct and operate a new gas-fired combined cycle facility at Northside Generating Station or at one of its other existing power plants. The natural gas would drive a gas combustion turbine and the heat from

combustion would be used to produce steam that would drive a steam turbine. Based on modeling projections by JEA, the facility would be expected to generate approximately 230 MW of electricity.

Under this scenario, Northside Unit 1 would remain in its current oil-and gas-fired configuration, and JEA would not proceed with the related action of repowering Unit 1. Based upon the projected cost of natural gas and the combined cycle unit efficiency, the cost of generating electricity at the new combined cycle facility was projected to be in the same range as the existing oil-fired units. This resulted in the new combined cycle unit being projected to operate at about a 60% capacity factor (the percentage of electricity actually generated by a unit during a year compared with the unit's maximum capacity). The difference in generating output between the proposed combined cycle unit operating at a 60% capacity factor and the two proposed CFB combustors operating at a 90% capacity factor would be supplied by operating the existing units at higher capacity factors, by purchasing electricity from other utilities, or most likely by a combination of these two options. If the existing Northside units were to remain operating at their historical levels, then the addition of a combined cycle unit would result in an increase in JEA emissions. The more likely scenario is that the existing units would operate at higher capacity factors than in recent years, resulting in a larger increase in emissions compared with historical levels and an even larger increase of most pollutants compared with JEA emissions expected following the repowering of Units 1 and 2 with CFB combustors. Therefore, even though air emissions of most pollutants from the combined cycle facility alone would be less than corresponding emissions from a CFB combustor alone, the emissions from the existing oil-fired units would result in greater overall emissions under the combined cycle facility scenario.

Construction activities and operations would be similar for the gas-fired combined cycle facility and the CFB combustors but with notable differences related to fuel, sorbent, and ash handling and storage facilities. Under the combined cycle facility scenario, natural gas would be delivered by pipeline; no coal, petroleum coke, limestone, or lime would be used. No combustion ash would be generated. This scenario would not contribute to the CCT Program goal of demonstrating advanced, more efficient, economically feasible, and environmentally acceptable coal technologies.

Third, rather than repowering Unit 2, JEA could purchase electricity from other utilities to meet JEA's projected demand. Under this scenario, no construction activities or changes in current operations would occur within the JEA system of power plants, including Northside Generating Station. JEA would not proceed with the related action of repowering Unit 1. There could be construction activities or changes in operations at the other utilities providing electricity to JEA if the needed electricity capacity were not already available.

This scenario would not contribute to the CCT Program goal, would not provide employment for construction workers in the Jacksonville area, and would not result in reductions of atmospheric emissions or groundwater use at Northside Generating Station. Moreover, existing Units 1 and 3 might be required to operate at capacity factors greater than historical levels if JEA were unable to purchase sufficient electricity from other utilities. Under those circumstances, annual air emissions and groundwater consumption would increase.

Major Environmental Impacts and Mitigation Measures

Potential impacts that could result from construction and operation of the proposed project are evaluated in the JEA EIS for resource areas including air quality, surface water, groundwater, floodplains and wetlands, ecological resources, noise, transportation, solid waste, and cultural and socioeconomic resources. The following summary provides key findings for areas of potential concern.

Air Quality

A computer-based air dispersion model was used to estimate maximum increases in ground-level concentrations of SO_2, nitrogen dioxide (NO_2), and particulate matter that would occur at any location as a result of emissions from the CFB combustor and limestone dryers for the proposed project (the Unit 2 repowering). Results indicate that maximum modeled increases are always less than 15% of their corresponding Prevention of Significant Deterioration (PSD) Class II increments (standards in the ambient air for increases in pollutant concentrations). One set of allowable increments exists for Class II areas, which cover most of the United States, and a much more stringent set of allowable increments exists for Class I areas, which include many national parks, monuments, and wilderness areas. Maximum concentrations generally occur at locations along, or very close to, the site boundary, often within 0.6 mile of the proposed CFB combustor stack. Dispersion of pollutants would reduce atmospheric concentrations at the nearest PSD Class I areas (more than 30 miles from the proposed facility) to only a small fraction of the maximum modeled increases near the site. The increases in pollutant concentrations at the nearest PSD Class I areas would be expected to be only small fractions of the corresponding Class I increments.

The combination of the proposed project and related action would result in emissions from the new 495-ft twin-flued stack that would be twice those considered in the analysis of the proposed project alone. However, as part of the related action, the elimination of emissions from the existing 250-ft stack serving Unit 1 would more than compensate for the added emissions. Compared to existing emissions at Northside Generating Station, a net decrease in maximum hourly emissions of SO_2, NO_X, and particulate matter would result from the addition of the repowered Unit 2 and the limestone dryers and the replacement of the existing Unit 1 with the repowered Unit 1. Therefore, a decrease in ground-level concentrations of these pollutants would be expected most of the time at most locations in the surrounding area (the overall effect would be beneficial). However, pollutant concentrations would not decrease for all averaging times at all locations; maximum ground-level concentrations at some locations could increase because the characteristics and location of the proposed new stack would be different from those of the stack currently serving Unit 1. The net impacts could be positive or negative on any particular day at any particular location.

Air dispersion modeling also was used to evaluate maximum adverse impacts possible from the proposed project in conjunction with the related action. Maximum modeled increases in ground-level concentrations are very similar to those for the proposed project alone. Maximum increases are always less than 15% of their corresponding Class II increments. Because the nearest PSD Class I areas are more than 30 miles away, pollutants from Northside Generating Station would be well mixed in the atmosphere, and stack characteristics would have little effect on ground-level pollutant concentrations in these areas. Therefore, a net decrease in pollutant emissions resulting from the proposed project in conjunction with the related action would be expected to improve air

quality, albeit by a very small amount, at the nearest PSD Class I areas.

Regarding potential cumulative air quality impacts, results of modeling regional sources and the proposed project indicate that no exceedances of national or state ambient air quality standards would be expected if the proposed project were implemented. Florida standards are the same as the National Ambient Air Quality Standards (NAAQS) except for annual and 24-hour standards for SO_2, for which the Florida standards are more stringent. During the 6-to 12-month transition period before the Unit 1 repowering, the 24-hour average SO_2 concentration is estimated to be as high as 97% of the corresponding Florida standard. This large concentration results from aerodynamic downwash effects caused by the proposed 200-ft tall combustor structure that would induce downward motion on the exhaust gas emitted from the 250-ft stack serving the existing Unit 1 and the 350-ft stack serving the existing Unit 3 (exhaust gas from the proposed 495-ft CFB combustor stack would not be subjected to appreciable downwash because the stack is taller). During the 6- to 12-month transition period before the Unit 1 repowering, JEA has committed to reduce maximum hourly SO_2 emissions from the existing Unit 1 by nearly 93% when operations commence for the proposed project. This reduction, which would be accomplished by using natural gas and fuel oil with an SO_2 emission rate averaging no more than 0.143 lb/MBtu (effectively, a blend with a sulfur content averaging no more than 0.13%), would assure that the maximum 24-hour average SO_2 concentration would not exceed the Florida standard.

Estimated SO_2 concentrations for other averaging periods are less than 60% of their respective standards. The annual average NO_2 concentration is less than 40% of its NAAQS. The 24-hour and annual averages of particulate matter are less than 65% of the NAAQS, even though ambient background particulate concentrations for both averaging periods are over 40% of the NAAQS.

Results of modeling regional sources and the proposed project in conjunction with the related action of repowering the existing Unit 1 indicate that maximum concentrations are always less than corresponding concentrations without the related action. For example, the 24-hour average SO_2 concentration for regional sources and the proposed project in conjunction with the related action is 91% of the Florida standard, compared to 97% for regional sources and the proposed project without the related action.

Ozone (O_3) concentrations during 1993–97 at the nearest monitor located about 5 miles north-northwest of Northside Generating Station were always less than 90% of the 1-hour NAAQS. Because changes in NO_X and volatile organic compound (VOC) emissions from the proposed project alone or in conjunction with the related action would be less than 1% of emissions in Duval County, they would not be expected to lead to any exceedances of the 1-hour NAAQS for O_3 at that monitoring location.

Regarding toxic air pollutants, findings indicate that the proposed project alone or in conjunction with the related action would not lead to any exceedances of, or close approaches to, guideline values for noncarcinogenic effects from toxic materials. Further, including both the inhalation and ingestion pathways, the maximum annual cancer risk to a member of the public resulting from dioxins, furans, and other carcinogenic substances emitted during operations was estimated to be less than 1 in 1 million (risk from lifetime of exposure estimated to be less than 3 in 100,000); given the upper-bound assumptions in the estimate, the risk would probably be less.

Water Resources

Because Unit 2 has not operated since 1983, the proposed project would increase the demand for cooling water. After Unit 2 is repowered, the demand by the entire 3-unit plant would be approximately the same as when the three units operated together from approximately 1978 until 1980. The sustained flow of the back channel of the St. Johns River would not be depleted by this diversion because nearly all of the withdrawn cooling water would be returned to the river after passing through the condensers. The amount of heat discharged to the St. Johns River would also increase as a consequence of the proposed project. However, the size of the thermal plume would not increase because simultaneous operation of all three units would increase the discharge velocity and enhance mixing.

Operation of the proposed project would reduce by 10% the groundwater consumption from the upper Floridan aquifer by Northside Generating Station, which would decrease the rate of decline of the potentiometric surface of that aquifer. As a result, more groundwater would be available to local users, and water quality of the aquifer would be stabilized because of reduced influx of brackish or saline groundwater from deeper aquifers.

Floodplains and Wetlands

No impacts from flooding would be expected to occur, and proposed activities would have a negligible effect on floodplain encroachment. A category 3, 4, or 5 hurricane in Jacksonville is a low-probability event that, if it occurred, would have serious consequences for Northside Generating Station. Although the effects of storm surge and waves that would occur along the beaches would partially be mitigated at Northside Generating Station by (1) its inland location, (2) the presence of the beach ridge along the dune line, and (3) Blount Island, the first floor of the station could be inundated by this unlikely event.

Ecological impacts to wetlands from the proposed project would be minor because no more than 1.8 acres of isolated hardwood wetland habitat would be lost during construction of the ash storage area, and disturbance of salt marsh habitats during construction of the solid fuel delivery system would be negligible. Wetlands associated with the upper salt marsh communities would not be measurably affected because nearly all of the conveyor system for solid fuel delivery would span these habitats using existing structures and would involve no clearing or earthmoving activities. Although some pilings might need to be installed at the upper fringes of the salt marsh and in San Carlos Creek, any impacts resulting from piling installation would be very localized and temporary and should not measurably affect the normal structural and functional dynamics of the salt marsh and nearby estuarine ecosystems.

As a mitigation measure to offset the loss of 1.8 acres of wetlands, JEA would purchase slightly greater than 3 acres of wetlands from an offsite mitigation bank and would restore 1 acre of salt marsh, which together would result in a net gain in the amount of wetlands. In addition, JEA plans to set aside and preserve 15 acres of undisturbed, uplands maritime oak hammock along the west bank of San Carlos Creek. By preserving the land, JEA would maintain habitat for wildlife, help protect the water quality of the creek, and leave a high-quality forested buffer area in a developing industrial area.

Ecological Resources

With regard to threatened and endangered species, manatees are of the most concern. Impacts on this species from construction of a new fuel and limestone unloading dock are unlikely because manatees probably would not

regularly frequent the dock area due to the paucity of submerged vegetation such as seagrasses and emergent cordgrasses in the immediate vicinity of the dock. Potential impacts resulting from operational activities such as docking of vessels would also be unlikely. The potential for manatees to be trapped and pinned between the dock and a vessel are minimal because the dock would be supported by widely spaced support pilings rather than consisting of one long continuous structure. Because manatees generally avoid swift currents and prefer slow-moving or stagnant water, they would not frequent the main discharge area in the back channel of the St. Johns River where currents are relatively swift. In addition, it is very unlikely that all units for both the St. Johns River Power Park and Northside Generating Station would be shut down simultaneously, thereby minimizing the probability that manatees would be harmed by a cold shock event.

Four or five juvenile loggerhead, Kemps Ridley, and/or green sea turtles (a listed endangered species) became trapped in the Northside Generating Station intake basin on one occasion during summer 1997 (the turtles were released unharmed). In order to prevent any further occurrences of juvenile turtles entering the intake structure, where they might become trapped, JEA installed on the intake trash rakes a finer grid of mesh bars (welded wire screen on 6-in. centers contrasted to the old 12-in. centers). The denser grid has excluded turtles of sizes similar to those observed from entering the intake basin and becoming trapped.

Cultural Resources

Because the area in the vicinity of the proposed project is rich in archaeological resources and the excavation of undisturbed land could affect important archaeological artifacts, both a cultural resources assessment survey of the proposed project site and a follow-up Phase II investigation were conducted. These studies found that there are no potentially significant historic or archaeological sites located in the area that would be disturbed by the proposed project. Under the terms of the Submerged Lands & Environmental Resource Permit that would be issued by the Florida Department of Environmental Protection (FDEP), JEA would be required to notify the appropriate agencies [the St. Johns River Water Management District, the FDEP, and the State Historic Preservation Officer] immediately upon discovery of any archaeological artifacts on the project site [Rule 62–330.200(2)(c), Florida Administrative Code].

Socioeconomic Resources and Environmental Justice

Construction and operation of the proposed project would not result in major impacts to population, employment, income, housing, local government revenues, or public services in Duval County. The percentage of Blacks and Asians in Duval County is greater than for Florida as a whole. Because there are relatively few people in poverty or Blacks and Asians living in the census tracts surrounding the proposed site, no disproportionately high and adverse impacts to low income or minority populations would occur. In particular, because of the relatively low number of minority and low-income residents in the vicinity of the proposed project, very few members of these groups would experience the adverse effects associated with increased road and rail traffic and related noise.

Transportation

Construction-induced traffic during the peak traffic hour would not exceed available capacity except for the section of Heckscher Drive from State Route 9A to Drummond Point (just west of Eastport Road). Without mitigation the congestion experienced on this segment would be significant. Accordingly, JEA has committed to encourage carpooling and suggest alternate routes to and from the site. The increased traffic would also result in noticeable congestion on New Berlin Road, especially at the intersection of Ostner and New Berlin Roads. To avoid a significant impact, JEA has committed to monitor traffic at the above-mentioned intersection and to place a police officer at the intersection to direct traffic during peak times, if needed. Should the presence of a police officer prove inadequate to control project-induced traffic, JEA has further committed to pursue authorization of a temporary traffic signal at that intersection.

Based on current projections, marine transportation would be the most economic means of delivering solid fuel and limestone for the proposed project. Consequently, no more than one 90-car train per week would be required to transport coal for the proposed project, and this could be offset by decreased rail deliveries and corresponding increased waterborne deliveries for operations at the St. Johns River Power Park. However, in the less likely event that all necessary coal would be transported by rail, up to 3 additional trains per week would be required for a total of 6 new one-way trips by 90-car unit trains. If all coal were transported by train, the 6 new one-way train trips per week would exacerbate impacts associated with noise, vibration, and blocked roads at on-grade rail crossings resulting from existing train traffic. These impacts are a source of concern for residents of Panama Park, North Shore, and San Mateo. Project-induced train traffic would increase total movement on the CSX line paralleling U.S. 17 by about 5% and would increase traffic on the spur line from U.S. 17 to the St. John River Power Park and Blount Island by approximately 8%. Additional train traffic could be minimized by relying more heavily on barges and ships for coal transport. As mentioned earlier, economic projections indicate that the marine fuel delivery mode is more likely.

Noise

During construction of the proposed project, noise levels would increase from the present operational levels. Construction would primarily occur adjacent to the existing turbine building. The noisiest periods of construction would be during steam blowouts and during the operation of a pile driver and other construction equipment. Except possibly during steam blowouts and possibly during operation of equipment used to construct a nearby segment of a conveyor, construction noise should not appreciably change the background noise of nearby residences, interfere with outside voice communications, or exceed the limitations of Rule 4, Noise Pollution Control, promulgated by the Jacksonville Environmental Protection Board (1995). This rule limits daytime construction noise levels to 65 dB(A) at residential property.

JEA likely would perform continuous, low-pressure, high-velocity steam blowouts. Although this activity would be conducted around the clock, noise levels at the nearest residences should be below levels of concern, because this type of blowout, uses low-pressure steam rather than high-pressure steam. However, because JEA's steam blowout plan has not been finalized, JEA has committed to installing mufflers if high-pressure steam blowouts are conducted, or, if mufflers are not installed, JEA has committed to measuring the noise levels at the nearest residences and ensuring that the levels would conform to the Noise Pollution Control ordinance limits.

The project-induced increased movement of trains through the local area would be accompanied by high-decibel train whistles and rattling rail cars. Train noise is a source of concern for residents of Panama Park, North

Shore, and San Mateo. One local resident has reported the level of train whistles as being 108 dB(A) and the level of rattling rail cars as being up to 85 dB(A). As mentioned in the transportation section above, additional train noise could be minimized by relying more heavily on barges and ships for coal transport.

Waste Management

The preferred alternative for management of the combustion ash would be to sell it as a by-product to offsite customers. An aggressive marketing program would be implemented to maximize the quantity sold. If more than approximately 70% of the ash could be sold over the 30-year lifetime of Northside Generating Station, the 40-acre storage site would be sufficient for complete containment, and disposal of the material would not be an issue. Additional permanent disposal space would be required if JEA cannot sell more than 70% of the ash. In the unlikely event that none can be sold, an additional 80 to 100 acres of disposal space would be required over the 30-year operating life of the facility. If additional space were required, potential locations for disposal include the property directly north of the Northside property, available land at the St. Johns River Power Park, and existing offsite landfills. Four large landfill sites that are permitted to dispose of nonhazardous industrial wastes have been identified in northeastern Florida and southeastern Georgia.

No-Action Alternative

Under the no-action alternative, DOE would not provide cost-shared funding for the proposed project; three reasonably foreseeable scenarios could result (see Alternatives above). Under the first scenario, in which JEA would repower the existing Unit 2 steam turbine without DOE funding, environmental impacts would generally be very similar to those of the proposed project. However, more of the solid fuel used could be petroleum coke, which would be brought to the site by waterborne transport. If current projections about the economic advantages of marine transportation change and rail transport is the primary means of moving coal to the project site, the increased use of petroleum coke under this scenario would result in less train traffic and more marine traffic to deliver the fuel as compared with the proposed project. As a result, there would be fewer train trips through the neighborhoods in the vicinity of Northside Generating Station, which would reduce potential problems with noise, vibration, and blocked roads at on-grade rail crossings.

Under the second scenario, in which JEA would construct and operate a new gas-fired combined cycle facility at Northside Generating Station or at one of their other existing power plants, there would be no train, marine, or truck traffic associated with fuel and sorbent delivery. No combustion ash would be generated and there would be no truck traffic to remove ash from the site. Consequently, impacts related to traffic noise and disruptions would be minimized. Air emissions would be expected to increase compared with historical levels because of the operation of the combined cycle facility in addition to the existing Northside units operating at the same or higher capacity factors. Therefore, air emissions under this scenario would generally be greater than those for the proposed project. Changes in concentrations of pollutants in the ambient air would depend on the location and project-specific nature of the facility (*e.g.*, stack height and exit temperature and velocity). Impacts to cultural resources could be less if there were less disruption to construct conveyors and other facilities on previously undisturbed land; conversely, impacts could be greater if more onsite and/or offsite land were disturbed because of a need to construct or upgrade a pipeline supplying natural gas to the facility.

Under the third scenario, in which JEA would purchase electricity from other utilities to meet JEA's projected demand, there would be no change in current environmental conditions at the site, and the impacts would remain unchanged from the baseline conditions. It is possible that existing Units 1 and 3 would operate at capacity factors greater than historical levels if JEA were unable to purchase sufficient electricity from other utilities. Consequently, annual air emissions and groundwater consumption would increase. In addition, some impacts to resources could result in the geographical area of the other utilities, particularly if a new facility were built to meet the JEA demand or if additional fuel were transported to the other site or sites to generate additional electricity. The level of any such impacts would depend on the project-specific characteristics of any facility construction, the fuel required by the facility, and the affected resources in the area.

Environmentally Preferred Alternative

The environmentally preferred alternative would likely be the first scenario under the no-action alternative. This scenario is nearly identical to the proposed project [*e.g.*, in both cases there would be a 10% reduction in annual stack emissions of each of 3 pollutants (SO_2, NO_X, and particulate matter) from Northside Generating Station and a 10% reduction in the total annual groundwater consumption of the station]. Consequently, under the first scenario, environmental impacts would be very similar to those of the proposed project except that there could be less train traffic and more ship and barge traffic to deliver the fuel because more of the solid fuel used could be petroleum coke. Assuming that there would be fewer train trips, the potential impacts associated with train noise, vibration, and blocked crossings would be reduced under the first scenario.

Under the second scenario of the no-action alternative, even though air emissions of most pollutants from the combined cycle facility alone would be less than corresponding emissions from a CFB combustor alone, the emissions from the existing oil-fired units would result in greater overall emissions compared to those of the proposed project. This environmental drawback would tend to outweigh the scenario's environmental benefits (*e.g.*, no train-, ship and barge-, or truck-related noise from traffic associated with fuel and sorbent delivery or ash removal).

The third scenario of the no-action alternative would not result in reductions of atmospheric emissions or groundwater use at Northside Generating Station. Moreover, there could be potential impacts from construction activities or changes in operations at the other utilities providing electricity to JEA if the electricity were not already available. Therefore, this scenario is not considered the environmentally preferred alternative.

Comments on the Final EIS

DOE received comments from the Marine Mammal Commission; the Florida Department of Transportation; the Florida Department of State, Division of Historical Resources; the United States Environmental Protection Agency (EPA), Region 4; and a member of the local community.

The Marine Mammal Commission expressed concern about potential harm to northern right whales from collisions with ocean-going vessels, and recommended that DOE consult with the National Marine Fisheries Service to assess what mitigation measures might be needed to protect northern right whales from injuries due to project-related vessel traffic. The Commission

also expressed concern about potential harm to manatees during routine delivery of fuel to the plant, and recommended that DOE consult with the U.S. Fish and Wildlife Service to determine whether the use of propeller guards should be required to protect manatees.

In regard to the protection of northern right whales from collisions with project-related vessels, approximately 50 to 60 ocean-going vessels are expected to deliver solid fuel, fuel oil, and limestone to Northside Generating Station annually after both units are repowered. In comparison, about 65 vessels delivered fuel oil to the station in 1998. However, some of these vessels were smaller river barges that did not enter into the Atlantic Ocean, which contains critical habitat for northern right whales from the shoreline out to as far as 15 nautical miles. As an upper-bound estimate, the annual increase in traffic in the Atlantic Ocean after both units are repowered would be about 50 vessels, which is less than 2.5% of the 2,047 round-trips made by vessels traveling between the St. Johns River and the Atlantic Ocean in 1999. The ocean-going vessels are not expected to travel at speeds greater than about 12 knots. Because (1) the trips (about 1 per week) would be relatively infrequent, (2) the number of trips would be a small percentage of current traffic, and (3) the vessels would travel slower than the threshold speed of 14 knots above which most serious injuries to whales occur, no mitigation measures would be necessary to protect northern right whales from collisions with project-related vessels. Staff with the National Marine Fisheries Service have concurred with this assessment.

In regard to the use of propeller guards to protect manatees from vessels delivering fuel to Northside Generating Station, currently propeller guards are not used on vessels in the St. Johns River. However, with the implementation of the mitigation measures discussed in the EIS (*e.g.*, the dock design would allow sufficient space between vessels and the dock structure such that manatees could easily avoid being trapped), it is unlikely that the proposed project would cause harm to a significant number of manatees, even without propeller guards on project-related vessels. Staff with the U.S. Fish and Wildlife Service have concurred with this assessment.

The Florida Department of Transportation stated that the project may have a direct impact on the State Transportation System and requested that JEA submit all site plans and access plans to the Jacksonville permit engineer. JEA has contacted the Jacksonville permit engineer cited in the comment and both parties agree that, because project-related construction would not occur along Heckscher Drive and because the only access for construction personnel would be located at the New Berlin Road entrance to the facility, JEA is not required to submit site plans and access plans for the proposed project to the Florida Department of Transportation.

The Florida Department of State, Division of Historical Resources stated that the JEA EIS addresses their concerns in regard to the potential impact on historic properties listed, or eligible for listing, in the National Register of Historic Places. The Division of Historical Resources also stated their opinion that no historic resources would be affected by the proposed action.

The U.S. EPA, Region 4, stated that their initial comments/concerns on the draft EIS have been satisfactorily addressed and that they appreciate the mitigation measures that JEA has agreed to employ in order to address potential impacts. EPA further stated that they continue to have environmental concerns about potential process releases and project impacts. DOE believes that by implementing the mitigation measures described in this Record of Decision it will address EPA's concerns.

A member of the local community expressed concerns regarding groundwater use, particulate emissions, and construction worker safety. Regarding groundwater use, as discussed above under Water Resources, JEA has committed to a 10% reduction in total annual groundwater consumption at Northside Generating Station after Units 1 and 2 are repowered (as compared to 1996 levels). Similarly for particulate emissions (see Air Quality above), JEA has established a target of a 10% reduction in annual stack emissions of particulate matter from Northside Generating Station (Units 1, 2, and 3), as compared to emissions during a recent typical 2-year operating period (1994–95) of the station (Units 1 and 3). These reductions are to be accomplished while increasing the total annual energy output of the station. In regard to the concerns expressed about construction worker safety, DOE believes that this concern reflects an accident that occurred in July 2000, while JEA was constructing (at its own risk) the solid fuel storage dome associated with the proposed project. In the response to the accident, JEA completed a root cause analysis to ensure that worker safety is not compromised. The analysis concluded that wind speeds during the incident exceeded the design threshold of the dome anchoring system during construction. Consequently, the construction process has been redesigned to use additional anchors and to delay installation of most of the dome covering until after the entire structural frame is permanently anchored.

Decision

DOE will implement the proposed action of providing approximately $73 million in cost-shared federal funding support to design, construct, and demonstrate the CFB technology proposed by JEA. The project is intended to demonstrate the combined removal of SO_2, NO_x, and particulate matter in a promising technology that is ready to be commercialized within the range that is most desired by utilities (250 to 400 MW). The project is expected to generate sufficient data from design, construction, and operation to allow private industry to assess the potential for commercial application of the CFB technology. This decision to provide cost-shared funding for the proposed project was made after careful review of the potential environmental impacts, as analyzed in the EIS.

Mitigation Action Plan

In accordance with § 1021.331(a) of the DOE NEPA regulations, DOE will prepare a Mitigation Action Plan that addresses mitigation commitments expressed in this ROD. Copies of the Mitigation Action Plan may be obtained from Dr. Jan Wachter, NEPA Document Manager, U.S. Department of Energy, National Energy Technology Laboratory, 626 Cochrans Mill Road, Pittsburgh, PA 15236, telephone: (412) 386–4809.

Issued in Washington, D.C., on this 29th day of November, 2000.

Robert S. Kripowicz,

Acting Assistant Secretary for Fossil Energy.

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DEPARTMENT OF ENERGY

Golden Field Office; Fiscal Year 2001 Broad Based Solicitation for Submission of Financial Assistance Applications Involving Research, Development and Demonstration

AGENCY: Department of Energy.

ACTION: Issuance of the Fiscal Year 2001 Broad Based Solicitation for Submission of Financial Assistance Applications