EA-1137; Environmental Assessment and FONSI Nonnuclear Consolidation Weapons Production Support Project for the Kansas City Plant Kansas City, Missouri

TABLE OF CONTENTS

List of Figures

Fig.1, Location of the U.S. Department of Energy's Kansas City Plant
Fig.2, Kansas City Plant Site Map

Summary

The U. S. Department of Energy (DOE) has prepared this Environmental Assessment (EA) to assist the agency in complying with the National Environmental Policy Act (NEPA) of 1969 as it applies to a Nonnuclear Consolidation Weapons Production Support Project (the project) that uses an electrochemical etching process at the DOE's Kansas City Plant (KCP). The project is expected to last approximately five years.

This action is needed to support continued reconfiguration of the Nonnuclear Weapons Complex. All elements of the reassigned project, except electrochemical etching of solid depleted uranium(1) (DU) components, have been performed at the KCP for several years and are considered ongoing and continuing operations in support of the plant's mission.

The proposed action includes renovation of an existing building at the KCP to accommodate equipment, security and environmental controls, and building restoration upon project completion, including disposal of equipment and wastes. The electrochemical etching process will use a sulfamic acid bath which will be designed to include environmental controls that prevent impact to the environment. Low-level(2) waste (LLW) and mixed(3) wastes will be generated by the electrochemical etching process. No liquid effluents or air emissions are anticipated as a result of this process. Pollution prevention practices will be aggressively utilized to reduce the quantity of wastes generated as a result of this work.

The no-action alternative is to continue current operations without assignment of the electrochemical etching process to the KCP.

1.0 Introduction

1.1 Introduction and Background

The DOE's Kansas City Plant (KCP) is a 3 million-square-foot facility located on 141 acres in southern metropolitan Kansas City, Missouri. The KCP is located about 12 miles south of the central business district of Kansas City, Missouri, and is part of the larger Bannister Federal Complex, which contains five federal agencies. AlliedSignal Inc. and its predecessors have managed and operated the DOE facility since 1949, producing nonnuclear components for virtually all of the nuclear weapons in the U.S. defense arsenal. AlliedSignal is also responsible for DOE's Kirtland Operations on Kirtland Air Force Base in Albuquerque, New Mexico.

Since 1993, the facility has served as the consolidated site for nonnuclear manufacturing within the weapons complex. The plant's primary mission is supporting continued viability of the nuclear weapons defense capability through production of the following:

Electrical and electronic products
Electromechanical and precision mechanisms
Rubber and plastics
Foams and honeycombs
Handling equipment and shipping containers
Telemetry equipment
Metal components

KCP's mission also includes product acceptance, fabrication of field support equipment, transportation safeguard products, metal structures and general machining, and development support for design laboratories. The plant also

partners with business, industry, academia and other federal agencies to share technology.

1.2 Purpose and Need For Agency Action

Budget reductions and political actions have prompted the DOE to reconfigure the Nuclear and Nonnuclear Weapons Complex. The DOE seeks a smaller, less diverse, and more cost efficient complex. Consolidation of nonnuclear sites is a part of the reconfiguration process. Through this consolidation, nonnuclear manufacturing activities will be better managed to decrease long-term operating costs and maintain the technical specialized skills base necessary to produce and test nuclear and nonnuclear components. In 1993, the Kansas City Plant was selected as the site for consolidation of all nonnuclear manufacturing activities following completion of a Nonnuclear Consolidation Environmental Assessment (NNC EA)[4] which evaluated reconfiguration alternatives. This decision was documented in a Finding of No Significant Impact (FONSI) issued by the DOE on September 8, 1993.

Fig. 1, Location of the U.S. Department of Energy's Kansas City Plant

Fig. 2, Kansas City Plant Site Map

As nonnuclear consolidation activities continue, the DOE is assigning the KCP responsibility for a Nonnuclear Consolidation Weapons Production Support Project that will acid clean solid DU components. The project also includes quality control evaluation of the completed product. Except for electrochemical etching of this particular metal, the other processes necessary for this project are routinely performed at the KCP. A detailed explanation of these processes is outlined in the 1993 NNC EA. Activities related to this proposal which are outlined in the 1993 NNC EA are incorporated into this document by reference.

Completion of the proposed action would help meet DOE strategic objectives by:

- Ensuring completion of established milestones for product delivery.
- Creating greater weapons complex efficiency by further consolidating similar nonnuclear production work at the KCP.
- Maintaining a high level of technical, specialized skills within the complex.
- Minimizing any potential impact to the environment or to worker safety and health.

1.3 Scope of the Environmental Assessment

This EA evaluates the potential environmental impacts of the no-action and proposed action alternatives. Under the no-action alternative, no work would be transferred to the KCP. Therefore, the existing environment would remain unchanged.

Detailed documentation for KCP's existing environment is provided in the following sections of the 1993 NNC EA, Chapter 3: Proposed Action and Alternatives, section 3.2.1 Proposed Action--Kansas City Plant Consolidation; and Chapter 4: Affected Environment and Environmental Consequences, section 4.1 Affected Environment and Environmental Consequences of the Proposed Action.

The proposed action is to use an electrochemical etching process to clean solid DU components at the Kansas City Plant. The proposed action includes renovation of an existing facility to complete this project. Electrochemical etching is not a new process at the KCP and was analyzed in the 1993 NNC EA; however, electrochemical etching of solid DU components was not analyzed in the NNC EA. A discussion of environmental impacts associated with the electrochemical etching of DU is included in this document.

2.0 Proposed Action and Alternatives

2.1 Proposed Action

The proposed action is to use an electrochemical process to etch a solid DU component at the KCP. This process is one of several required to complete the Nonnuclear Consolidation Weapons Production Support Project. Building 96, which is located in the northeast section of the KCP complex, will be refurbished to house operations required to complete the work. All processes, with the exception of electrochemical etching and quality control evaluation of the completed product, are routinely performed at the KCP. This EA addresses actions required to complete the electrochemical etching process which are not specifically analyzed within the 1993 NNC EA.

The proposed action includes three main elements: (1) operating the electrochemical etching system, (2) managing wastes generated by the electrochemical etching and quality control evaluation, and (3) building restoration operations upon project completion. The electrochemical etching process is a cleaning and weight reduction operation to ensure that the product functions properly. Once cleaned, the DU component and a beryllium insert are placed in a stainless steel container that is welded closed in an inert [(5)] atmosphere. The container is then machined to meet external dimension requirements and evaluated to ensure that an inert atmosphere is maintained.

Equipment used in support of the project will be obtained by internal reallocation, purchase, or transfer from the DOE's Rocky Flats Environmental Technology Site in accordance with nonnuclear consolidation. Equipment transferred from the site will be certified to meet radiological release limits prior to shipment to the KCP. Once the project is completed, the facility and equipment will be cleaned as necessary and released in accordance with established DOE criteria in force at the time of project close-out. Equipment and/or structures which cannot be cleaned will be characterized, prepared, packed and shipped off-site for reuse in another radiological area, treated and disposed of as mixed waste, or disposed of as Low- Level Waste, in accordance with the applicable federal and state regulations.

2.2 Other Alternatives

2.2.1 No-Action Alternative

Under the no-action alternative, operations required to complete this process would not be performed at the KCP. Inability to complete the work at the KCP hinders the overall aim of the DOE to provide products and services required for the design, manufacture, and testing of nuclear weapons components. These products and services support a national security policy that requires the maintenance of a credible nuclear deterrent, and are necessary to meet stockpile objectives established by the President and the Congress. This project supports the DOE's objective to manufacture nonnuclear components for nuclear weapons and to test and monitor other components in order to maintain a viable nonnuclear production capability. The no-action alternative prevents the DOE from meeting this objective and contradicts the intent of nonnuclear consolidation.

2.2.2 Other Alternatives Considered But Eliminated From Detailed Analysis

Other alternatives to complete this work are limited. The decision to transfer the project, which uses the electrochemical etching process, to the KCP has already been made by the DOE. This was the only alternative that would allow the DOE to meet existing production schedules. Therefore, no consideration was given to alternative locations in terms of DOE sites. However, consideration was given to issues such as process design changes and alternative on-site locations. Summaries of the analysis used to conclude that these alternatives would not meet the needs of the DOE are provided below:

- Process design and the materials used are established by DOE's design laboratories and are developed to meet a specific need. Therefore, process and design changes were not considered to be reasonable alternatives.
- Construction of a new facility or renovation of an alternate site which does not meet the security and ES&H requirements for this project could not be accomplished without jeopardizing DOE production schedules. The proposed location, Building 96, provides ample area for this process activity. Due to the low workload in this building much of the space was underutilized. This building is also equipped with electronic security access, and

provides a non-contiguous area better serving security and ES&H needs. In addition, the majority of utilities needed to support the work are present, which results in a significant cost avoidance.

Accordingly, the above alternatives are not considered to be reasonable and were not analyzed further.

3.0 Affected Environment and Environmental Consequences

No Action: The no-action alternative represents "no change" in the affected environment and existing operations. A baseline description of the affected environment which reflects impacts of the "no-action alternative" can be found in the 1993 NNC EA, Chapter 3: Proposed Action and Alternatives (3.2 -- Current Operations at Existing Sites [3.2.1 through 4]), and Chapter 4: Affected Environment and Environmental Consequences.

Proposed Action: Potential environmental impacts for the proposed action are assessed for air quality, water quality, radiation, waste management and pollution prevention/waste minimization, safety and health, floodplains and wetlands, threatened and endangered species, historical and archaeological resources, and environmental justice. Potential impacts to the affected (existing) environment due to the proposed action are discussed below.

3.1 Air Quality

3.1.1 Affected Environment

KCP has multiple cleaning, surface-coating, and degreasing operations that have the potential to emit volatile organic compounds (VOCs). KCP's four boilers are the primary sources of nitrous oxides and carbon monoxide hazardous air pollutants. Processes with the greatest hazardous air pollutant (HAP) emissions include metal-plating, surface coating and spray cleaning. With the exception of the ozone one-hour standard, the ambient air quality in the entire Bannister Federal Complex (which includes the KCP) does not exceed applicable guidelines or regulations. The ozone standard is exceeded primarily due to chemical reactions that involve vehicle emissions.

3.1.2 Environmental Consequences

Potential regulated air pollutant emissions from the electrochemical etching process and quality control evaluations are calculated to be less than 100 pounds (.05 tons) per year of ethanol, a VOC, which is much less than total KCP VOC emissions of 8.75 tons during calendar year 1994. Materials used or processed will include ethanol, acids, beryllium, and DU (radionuclides).

An acidic mist containing DU may be generated during the removal of DU product from the acid bath because of the application of electrical current to the bath which creates hydrogen and oxygen bubbles. A 1500 cubic feet per minute air flow will ventilate the electrochemical etching process. The process will be designed to control any mist generated, and a high efficiency particulate air (HEPA) filter will be located at the process exhausts. The HEPA filter is designed to be 99.97 percent efficient in trapping particles of .3 microns and more efficient with larger particles. HEPA filters are designed to be fire and chemical resistant. They are constructed of tiny glass fibers combined with a small amount of organic material added for strength and water repellence. Pollution abatement equipment is also included in the design to prevent the release of any measurable levels of DU or acids.

The weld analysis process will involve cutting a stainless steel assembly containing a beryllium insert. Beryllium may be disturbed during this cut, but special tooling will be designed to minimize the possibility of creating beryllium dust. The process will be controlled with a HEPA filter to eliminate any beryllium air emissions. If the final process is subject to federal, state or local beryllium air regulations, compliance with regulatory requirements will be maintained and documented.

A notification of KCP construction has been submitted to the city of Kansas City, Missouri (KCMO) in compliance with KCMO Section 18.92 Review of New Source and Modifications, and 10 Code of State Regulations 6.060 Construction Permits Required. Operating air emissions are estimated to be below annual emission inventory reporting

levels of 0.1 tons per year. By designing the process to prevent air pollutant releases, the process should not be subject to national emissions standards for hazardous air pollutants (NESHAP) 40 Code of Federal Regulations (CFR) Part 61 Subpart C for beryllium and Subpart H for radionuclides.

Due to special tooling, engineered process controls, and minimal emissions generated by the electrochemical etching process and quality control evaluations, minimal air impacts are expected.

3.2 Water Quality

3.2.1 Affected Environment

Pretreated industrial process wastewater and untreated sanitary wastewater are discharged to the Kansas City, Missouri, wastewater treatment plant under authority of a Clean Water Act (CWA) permit. Additionally, the KCP discharges stormwater under authority of a National Pollutant Discharge Elimination System (NPDES) permit, also administered under the CWA. These permits require periodic monitoring and reporting of wastewater discharges from the KCP to the appropriate permit authority.

3.2.2 Environmental Consequences

This electrochemical etching process utilizes a deionized rinse water to remove residual acid from the surface of a solid DU component. This rinse water is continuously recycled and will not be discharged to the sewer system at any point during the operation. The rinse water may require periodic change-out to maintain quality. Management of the spent acid bath and rinse water is addressed under Section 3.4, Waste Management. The acid bath and associated deionized rinse will be surrounded by secondary containment (floor trench with flush grating) sized to contain spills. The only wastewater discharged from the building housing this operation will be from sinks and lavatories that do not receive effluent[(6)] from process operations. Since no discharges of wastewater to sewer systems or surface waters are associated with this process no water impacts are expected. Likewise, because secondary containment is provided for all process areas, no hydrologic (groundwater) impacts are expected.

3.3 Radiation

3.3.1 Affected Environment

Uranium is a naturally occurring radioactive element. DU is the material that remains after the more radioactive components (isotopes) of the natural uranium have been extracted. The high density of DU makes it efficient for use as a commercial radiation shielding material. DU is also used as a shielding material in industrial radiography cameras, ballasts in airplane wings, and as counterweights in large cranes and elevators.

Processes at the KCP that use radioactive material are comparable to those at commercial manufacturing and/or laboratory facilities. The KCP inventory of radioactive material is in the form of confined (sealed, plated, or encapsulated) sources. These sources can be categorized as commercially available or non-commercial sources. Commercially available items include sources for laboratory analysis, calibration, smoke detectors, exit signs, and depleted uranium shielding for a radiography unit. Non-commercial items include a source for boron analysis and sources for generating short pulses of neutrons. In addition to confined radioactive sources, the KCP uses radiation generating devices (RGDs). RGDs include various types of industrial x-ray systems, a medical x-ray unit, electron microscopes, and electron beam welders. There are no routine activities at the KCP which result in releases of radioactivity to the air or sanitary sewer system.

Current operations make use of engineered controls (shielding or interlocks) and/or protective clothing such as lab coats, gloves, or safety glasses for worker radiological protection. None of the sources generate loose radioactive contamination which could inadvertently be inhaled, ingested or absorbed through the skin. Workers are monitored for external exposure to radiation and historically have results which are 100 times below DOE and Nuclear Regulatory

Commission (NRC) occupational radiation worker exposure limits. None of the worker exposures have been close to surpassing DOE and NRC limits.

3.3.2 Environmental Consequences

In the process considered here a solid DU component will be etched with acid. As a result, very small concentrations of DU will occur in the acid bath, the mist above the bath, and in the rinse water. Occupational radiation protection for the acid etching process will not introduce new or additional worker protection practices that are not already implemented at the KCP for working with radioactive material or chemicals.

Hazards, in terms of external exposure, are extremely low because of the relatively small quantity of DU used in the electrochemical etching process, and the installation and use of air pollution control equipment. Potential exposure levels for the general public and the uninvolved worker were calculated using the Environmental Protection Agency's Air Dispersion Model [7]. For the closest receptor to be subjected to a 0.1 millirem[8] per year exposure, more than 15 percent of the planned annual DU usage would have to become airborne. Based on KCP experience with a chromium acid electroplating solution (a similar process which uses no engineered controls), less than 0.1 percent of the material processed is expected to become airborne.

Therefore, the actual exposure at the closest receptor is estimated to be 250 times less than 0.1 millirem/year. The 0.1 millirem/year rate is such a low rate that neither obtaining a permit nor air monitoring is required of DOE facilities[9]. With the use of pollution control equipment the exposure at the closest receptor is estimated to be less than 0.2×10^{-6} millirem/year. The average background from naturally occurring radiation is 360 millirem per year. Without the incorporation of pollution prevention controls, the calculated release from the electrochemical etching process is 1/3600th of natural background radiation.

The radiation protection practices utilized for current operations will be applied to the electrochemical etching process. Workers will continue to be monitored for external exposure. Since some of the sources used in current operations consist of more radioactivity than the DU components, no significant changes in worker radiation exposure results are expected. It will not be necessary to implement protection from internal exposure practices because the DU components will be physically similar to radioactive material sources in the current KCP inventory. Therefore, with respect to workers, uninvolved workers, and the public, neither the handling of the DU component for this process nor the estimated emissions from the process will introduce any new radiation hazards.

3.4 Waste Management

3.4.1 Affected Environment

Low Level Radioactive Waste (LLW) and mixed waste management activities conducted at KCP are covered by DOE orders and federal and state statutes and regulations. The KCP does not routinely generate mixed wastes (which are subject to applicable RCRA requirements). LLW is stored on-site on an interim basis until sufficient quantities accumulate to warrant shipment to approved off-site treatment and disposal facilities. Currently, the KCP generates approximately one to two drums of LLW each year.

3.4.2 Environmental Consequences

Low Level Waste. The project is expected to generate LLW from the rinsing of the solid DU components as they are removed from the etching solution, and from the restoration of the facility at completion of the project. The water used to rinse the residual acid from the etched part will be a liquid LLW. The water will be filtered through a purification system and returned to the cleaning process. Any rinse water generated during change out, as well as rinse water left at the end of the production cycle, will be solidified, packaged according to regulations, and shipped for disposal. The spent filter medium will be prepared to meet the disposal site's waste acceptance criteria and shipped off-site. The volume of waste from this activity is expected to be approximately one drum per month.

At the completion of the project, Building 96 will be prepared for other projects. Part of this preparation will involve restoring radiological control areas to general use areas. The process of restoration has the potential to generate LLW. It is expected that most of the equipment that comes into direct contact with DU will be cleaned and released in accordance with DOE criteria in force at the time of facility close-out. Equipment and/or structures which cannot be cleaned will be characterized, prepared, packed, and shipped off-site for reuse in another radiological area, treated and disposed of as a mixed waste, or disposed of as LLW in accordance with the applicable federal and state regulations. The volume of LLW to be generated from this activity is difficult to estimate at this time but is not expected to exceed one standard truckload of LLW to be shipped off-site for disposal.

The fabrication of products to support the Weapons Support project requires adherence to very precise standards. Quality assurance evaluations will be performed on the product during which a small number of units will be ruptured. Product that is destroyed during evaluation or does not conform to production standards will be segregated into the appropriate waste streams and managed in accordance with applicable regulations. This activity is expected to generate less than one drum of LLW per year.

Mixed Waste. Mixed wastes, generated by the electrochemical etching process, include spent acid from the bath that contains dissolved DU. This spent acid waste will be neutralized in an elemental neutralization unit as defined in 40 CFR 261.10 and operated as described in 40 CFR 265.1(10). The neutralization process will treat the waste and change the waste category from mixed waste to LLW. The neutralized acid (liquid) will be prepared to meet the disposal site's waste acceptance criteria, and shipped off-site for disposal. The volume of this waste stream is expected to be approximately 0.5 drums LLW per month.

The current process definition also uses 200-proof ethyl alcohol as an agent in the cleaning process. The KCP has successfully substituted less flammable materials in similar processes, and intends to apply the same effort to this project. If substitution is not possible, ethyl alcohol will be used and the waste alcohol (a mixed waste) will be prepared, packaged, and shipped for thermal treatment at a permitted and licensed facility. The volume of this waste stream is expected to be less than 100 pounds per year.

3.5 Pollution Prevention/Waste Minimization

The Pollution Prevention Act of 1990 established a national policy for the prevention or reduction of pollution at the source wherever feasible; recycling of resources where possible; treatment of pollution that cannot be prevented or recycled; and disposal of pollution as the last resort. In response to this law, DOE's 1992 Policy on Waste Minimization and Pollution Prevention was implemented. This policy includes provisions for cost-effective waste minimization and pollution prevention in all of DOE's activities. The KCP is committed to these pollution prevention requirements.

The KCP is aggressive in its efforts to minimize wastes generated from its processes. There are many improvements being considered for this project that can result in very significant reductions in the total waste stream.

The size of the radiological control areas will be restricted to include only equipment necessary for the handling of DU. This will minimize the total waste generated during process close-out after all production has been completed.

The process rinse water will be purified and reused within the process. This practice is expected to eliminate a liquid LLW stream that had been projected at 3000 gallons per month and converts it to a semi-solid LLW projected to be 3-6 cubic feet per month.

Chemical substitution has been one of the KCP's most effective pollution prevention tools, and this process is no exception. The KCP is currently investigating eliminating ethyl alcohol from the process. This would prevent the generation of a mixed waste and may not require the generation of a new LLW stream.

Segregation and recycling of the product which does not conform to the strict standards for each part is another methodology which is being aggressively pursued by the KCP for this product.

3.6 Safety and Health

The likelihood for exposure to any member of the public due to normal operations of the proposed action is considered extremely unlikely. This level of risk is attributed to the nature and amount of materials involved in normal operation, engineered controls designed into the building, and administrative controls used to regulate the activities. The likelihood of detrimental exposure because of an operational accident or natural phenomena during the electrochemical etching process or quality control evaluations is extremely unlikely because of mitigating factors used in normal operations combined with the benefits of site engineered controls and facility construction. The KCP prepares a site Emergency Plan that is shared annually with community emergency responders. The impact of a postulated event involving the public would also be reduced by site-specific procedures that have been developed and are used for off-normal operations and emergency response.

A Preliminary Hazard Analysis (PHA)(10) was performed by AlliedSignal on the proposed action. Based on the information provided, the PHA process did not reveal any new concerns that are outside the scope of existing operations. As a result, it is anticipated that the hazards associated with the operation of this activity are similar to those already encountered at the KCP. The existing hazards and their controls are included in the Site Safety Assessment for the KCP. The conclusion of the Site Safety Assessment is that "operations at the KCP involve hazards of the type and magnitude routinely encountered in industry and are generally accepted by the public." The Occupational Injury and Illness Incident Rates for 1994 support the conclusion. The Kansas City Plant Total Case Incident Rate (TCIR) was 1.23 and the Lost Workday Case Incident Rate (LWCIR) was 0.41. Both rates are much lower than the rates encountered in similar manufacturing categories of general industry. These rates are considerably lower than the most recent TCIR and LWCIR information available from the U. S. Department of Labor (1993) for similar industry, which are 6.2 and 2.7 respectively. As discussed under section 3.3.2, neither the handling of the DU components, the estimated emissions from the electrochemical etching process, nor the quality control evaluations will introduce any new hazards outside of the scope of existing operations.

3.7 Floodplains and Wetlands

The entire federal complex, including the KCP, lies within a 100-year floodplain. A floodwall and levees surround the KCP and provide protection against floods that have an approximate recurrence interval of 500 years. All activities associated with the proposed action occur within the KCP site and are protected by the floodwall. Therefore, no impacts to the floodplain are anticipated as a result of the proposed action.

The U. S. Army Corps of Engineers (COE), which has regulatory authority for protection of wetlands, conducted a site inspection at the Bannister Federal Complex (COE 1990) which documented that no wetland permits or other compliance requirements are needed at this site. No wetlands will be impacted by the proposed action because there are no wetlands on the KCP site.

3.8 Threatened and Endangered Species

In conjunction with another DOE project designed to treat process wastewater at the KCP, the Fish and Wildlife Service (FWS) and Missouri Department of Conservation (MDC) were contacted for information on threatened and endangered species that may be present in the area (FWS 1991/MDC 1991). The bald eagle was identified as being present in thegeneral area. However, bald eagles are not expected to be present at the KCP because the site is not close to a large body of water where eagles congregate, and no critical habitat for bald eagles exists within the KCP complex.

3.9 Historical and Archaeological Resources

No historical or archaeological resources have been identified within the KCP boundaries (Missouri Department of Natural Resources 1991). Therefore, no archaeological resources will be affected by the proposed action or no-action alternatives.

3.10 Environmental Justice

Executive Order 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," was reviewed in connection with this EA. Pursuant to the Executive Order, federal agencies are to make the achievement of environmental justice part of their mission. Federal agencies are to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations, and allow all portions of these populations a meaningful opportunity to participate in the development of, compliance with, and enforcement of federal laws, regulations and policies affecting human health or the environment regardless of race, color, national origin, or income.

In view of the very minor impacts associated with the proposed action, as discussed previously, as well as the absence of high percentages of minority and low-income populations in the near vicinity of the Kansas City Plant, DOE believes that there are no disproportional adverse effects on such populations from the air, water, or waste impacts of the proposed action.

3.11 Other Agencies Consulted

Recent consultations with the following agencies, documented in conjunction with another EA but relevant to the scope of this EA, were used as references to address issues of compliance with the Threatened and Endangered Species Act and Historical and Archaeological Resources:

Agency/Contact

Fish and Wildlife Service -- R. L. Hansen
Missouri Department of Conservation -- D. F. Dicknette
Missouri Department of Natural Resources -- M. S. Weichman

Copies of correspondence from the above agencies can be found in Section 5 -- Appendix. A summary of consultations with the agencies listed above is provided below.

- No known archeological or historical properties are located within the proposed project area.
- No sensitive species or communities are known to occur on the immediate site or surrounding area.
- No designated critical habitat occurs in the project area.

3.12 Cumulative Impacts of the Proposed Action

No cumulative impacts to water or air quality, threatened and endangered species, floodplains and wetlands, historical and archaeological resources, or minority or low-income populations are anticipated as a result of this project. The KCP will experience an increase in the generation of low-level and mixed wastes as a result of this work. The total volume of wastes produced for off-site shipment are estimated to be eighteen drums per year of LLW and 100 pounds per year of mixed wastes (if a substitute for ethyl alcohol cannot be found) generated during project operation; and one standard truckload of LLW generated during restoration of the project area.

4.0 References

AlliedSignal, Inc. 1995. Title II Specifications. Project 1772. Title: Building 96 Project. Prepared by Burns & McDonnell for United States Department of Energy, Kansas City Plant, October 1995

AlliedSignal, Inc. 1995. Environmental Assessment. Separate Process Wastewaters, Part A: Contaminated Flow Collection and Treatment System for the Kansas City Plant, January 1995

COE (U. S. Army Corps of Engineers) 1990. Environmental Assessment on Completion of Flood Protection Works, Bannister Road Federal Complex, Kansas City, Missouri. Planning Division, Environmental Resources Branch, Kansas

City District, Kansas City, Missouri, September 1990

DOE Nonnuclear Consolidation Environmental Assessment, Nuclear Weapons Complex Reconfiguration Program, Department of Energy Office of Defense Programs, June 1993

Site Safety Assessment for the DOE Kansas City Plant. Richland; Pacific Northwest Laboratory, September 1995

40 CFR 61 National Emission Standards for Hazardous Air Pollutants -- Subparts C & H

5.0 Appendix

Correspondence With State And Federal Agencies

(1) Uranium is a naturally occurring radioactive element. Depleted uranium (DU) is the material that remains after the more radioactive components (isotopes) of the natural uranium have been extracted.

(2) Waste that contains radioactivity but is not classified as high-level waste, transuranic waste, spent nuclear fuel, or by-product material as defined by DOE Order 5820.SA, Radioactive Waste Management, and the Nuclear Regulatory Commission (10 CFR 61 Licensing Requirements for Land Disposal of Radioactive Waste).

(3)Waste that contains Resource Conservation and Recovery Act (RCRA) hazardous and radioactive waste.

(4) Copies of the NNC EA can be found in the reading room at the Blue Ridge Branch of the Mid-Continent Public Library.

(5)An atmosphere that prevents oxidation using a gas such as argon.

(6) The term "effluent" refers to substances, particularly liquids, that enter the environment from a specific source. Effluent generally refers to wastewaters discharged from a sewage treatment or industrial plant.

(7) 40 CFR 61, Subpart H -- National Standards for Emission of Radionuclides Other than Radon from DOE facilities.

(8) A millirem is a unit used for measuring exposure to radiation.

(9) 40 CFR 61, Subpart H--National Emission Standards for Emission of Radionuclides Other than Radon From Department of Energy Facilities.

(10) A systematic review of hazard identification that is generally conducted in the early development of an activity. After identification, the hazards are evaluated and corrective actions are proposed, if necessary, to eliminate or reduce the hazard to an acceptable level prior to the commencement of an operation or process.

FINDING OF NO SIGNIFICANT IMPACT NONNUCLEAR CONSOLIDATION WEAPONS SUPPORT PROJECT FOR THE DEPARTMENT OF ENERGY'S KANSAS CITY PLANT

Proposed Action: The proposed action is to use an electrochemical process to etch solid depleted uranium (DU) components at the DOE's Kansas City Plant (KCP). This process is one of several required to complete the Nonnuclear

Consolidation Weapons Production Support Project. An existing building, which is located in the northeast section of the KCP Complex, will be refurbished to house operations required to complete the work. All processes, with the exception of electrochemical etching of solid depleted uranium components and quality control evaluation of the completed product, are currently routinely performed at the KCP. The environmental assessment (EA) analyzed those activities of the electrochemical etching process that are not specifically analyzed in the 1993 Nonnuclear Consolidation EA (DOE/EA-0792).

The proposed action includes three main elements: (1) operating the electrochemical etching system, (2) managing wastes generated by the electrochemical etching of solid depleted uranium components and quality control evaluation, and (3) building restoration operations upon project completion.

The Department has prepared an EA (DOE/EA-1137) that analyzes impacts of the proposed action and the no-action alternative. Under the no action alternative, operations required to complete the electrochemical process would not be performed at the KCP. Inability to complete the work at the KCP hinders the overall mission of the DOE to provide products and services required for the design, manufacture, and testing of nuclear weapons components. These products and services support a national security policy and are necessary to meet stockpile objectives established by the President and the Congress. This project supports the DOE's objective to manufacture nonnuclear components for nuclear weapons and to test and monitor other components in order to maintain a viable nonnuclear production capability. The no-action alternative prevents the DOE from meeting this objective.

Other alternatives to complete this work are limited. Process design and the materials used are established by DOE's design laboratories and are developed to meet a specific need. Therefore, process and design changes were not considered to be reasonable alternatives. Construction of a new facility or renovation of an alternate site which does not meet the security and environment, safety and health requirements for this project could not be accomplished without jeopardizing DOE production schedules. Accordingly, these alternatives were not considered reasonable and were not analyzed further.

Environmental Consequences: Due to special tooling, engineered process controls, and minimal emissions generated by the electrochemical etching process and quality control evaluations, minimal air impacts are expected as a result of this work. Because no discharges of wastewater to sewer systems or surface waters are associated with this process, no water impacts are expected. Similarly, because secondary containment is provided for all process areas, no hydrologic (groundwater) impacts are expected. No significant changes in worker radiation exposure results are expected. Existing practices for the handling of the radioactive sources in the current KCP inventory adequately protect workers from internal exposure. Due to the relatively small quantities involved and the operation of air pollution control equipment, radiation exposure to the public and to uninvolved workers is estimated to be inconsequential. Therefore, with respect to workers, uninvolved workers, and the public, neither the handling of the DU component for this process nor the estimated emissions from the process are significant. The proposed action would not adversely affect the floodplain because it takes place in an area which is already developed. No known archeological or historical properties are located within the proposed project area. No sensitive species or communities are known to occur on the immediate site or surrounding area. No designated critical habitat occurs within the project area. There are no disproportional adverse impacts which affect minority or low-income populations.

No cumulative impacts to water or air quality, threatened and endangered species, floodplains and wetlands, historical and archaeological resources, or minority or low-income populations are anticipated as a result of this project. The electrochemical etching process will increase the volume of low-level wastes (LLW) and mixed wastes generated at the KCP. The total volume of wastes produced for off-site shipment are estimated to be eighteen drums per year of LLW and 100 pounds per year of mixed wastes generated during project operation; and one standard truckload of LLW generated during restoration of the project area. However, these wastes will be handled and disposed of in accordance with applicable regulations and no significant impact from the generation of these wastes is expected.

For further information on the proposed action or the National Environmental Policy Act (NEPA) review program at the Kansas City Plant, please contact:

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Finding: Based on the analysis of impacts in the environmental assessment, the proposed action to use an electrochemical etching process on solid depleted uranium components at the DOE's Kansas City Plant would not significantly affect the quality of the human environment within the meaning of National Environmental Policy Act, 42, U.S. C. 4321, et seq. Therefore, the Department is issuing this finding of no significant impact and the preparation of an environmental impact statement is not required. Furthermore, there is no practicable alternative to locating the proposed action in the floodplain (because the Kansas City Plant is located entirely within the floodplain), and the proposed action would be designed to avoid or minimize impacts to the floodplain (including limiting construction to an already developed area).

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