Jefferson Lab
Thomas Jefferson National Accelerator Facility

MEMORANDUM

To: NEPA (National Environmental Policy Act) File

From: Linda Even, ESH&Q Division

Subject: NEPA Activity Characterization CXA-2009-002
Modifications/Construction and Use of HD ICE Facility

Date: March 13, 2009

This characterization is based on discussions with Suresh Chandra and Bert Manzlak, and on construction drawings and supporting information provided separately. The job will involve modifications to the existing Test Lab annex, adding about a 53' x 12' room to the north, and a new concrete pad and emergency generator to the west of this new room.

The project will require major changes to the inside of the Test Lab annex and includes drilling excavations as noted on the attached Activity Information Checklist. The pits will be used for holding equipment to build experimental apparatus. The new addition will affect an already paved or otherwise disturbed area. The total area to be disturbed (not including the existing 24' by 50' indoor space to be affected) is under 2,000 SF.

Though the work disturbs under 2,000 SF and about 1,000 SF disturbance for the in-building pit construction, it was determined an Activity Information Checklist be prepared.

There will be a minor impact to the environment as the area is already highly developed. There will be some small changes to local drainage but should have minimal impact as local retention pond is more than adequate for this scale project.

The scheduled activity will take about six months to complete. Some scope elements involving NEPA concerns follow.

- Subcontractor is to install Erosion and sediment control (E&SC) measures according to the Virginia Erosion and Sediment Control Handbook. Identified measures will be in place prior to any disturbance and maintained per project specifications.
- Jefferson Lab to assume role of inspection of E&SC measures if the area affected is $\geq$ 2500 SF.
- Excavate earth materials and will be removed from site.
- Any remaining unpaved areas will be graded, tilled and seeded as described in the specifications.
- No permit is necessary for construction dewatering from the pit excavations in this portion of the Jefferson Lab site.

There will be no to minimal amount of increased storm water runoff and no loss of habitat due to this project. There will also be minor temporary effects to pedestrian traffic, road traffic, and noise during the work. Run off mitigation will include the new completed retention pond and seeding any disturbed areas at the completion of the job. No mitigation for habitat loss was identified as necessary. There are, therefore, minimal environmental concerns with this activity, and minimum long-term environmental concerns just from general use of the facility.

Environmental aspects associated with the project are identified in #31 on the AIC.

Based on the documentation provided by Facilities Management and Logistics staff, and that erosion and sediment control measures will be installed and maintained by the subcontractor at locations to be determined and that the resultant disturbed conditions are temporary and will be mitigated as identified by ESH&Q and Facilities Management and Logistics at the termination of the job, it appears that the environmental concerns due to this project are minor and can be addressed under the following site NEPA documents:

Jefferson Lab NEPA Documentation	Discussion
DOE/EA-0257, Environmental Assessment (EA) for the Continuous Electron Beam Accelerator Facility, Newport News, Virginia	This EA covers the general functioning of Jefferson Lab to support its research mission.
CEBAF-005-94, Categorical exclusion for Siting, Construction, and Operation of Small-Scale Support Buildings and Structures	This CX covers the new construction part of the project.
CX-GEN-012, Alternations to Existing Buildings… to support personnel and equipment and relocating equipment where users would be similar to former use.	This CX covers the indoor modification and usage activities related to this project.

It is understood that all conditions identified in the above NEPA documents and the general notes listed below will be followed. A list of a few key conditions follows.

General Conditions

- Except for requiring site DCR01 permit coverage if affected area reaches 2500 SF or more, there will be no other effect on permitted site activities. Jefferson Lab SOTR will ensure Erosion and Sediment Control inspections and maintenance is completed during outdoor work activity.
- There are no expected contaminated soil issues.
- There will be minor earth disturbance in a highly disturbed area, and there are no expected environmentally sensitive resources in the area. If a sensitive resource is identified, immediate notifications to JSA will be made per specifications.

Construction and Use Notes

- Traffic in the vicinity will be controlled and restricted.
- There will be no disturbance to areas outside of the limits of construction.

- E&SC measures to be installed and maintained by the subcontractor per the Virginia Erosion & Sediment Control Handbook, or as otherwise identified wherever the soil is disturbed. E&SC Measures to be maintained until the project is completed.
- Secondary containment will be provided for any storage of fuels or oils for construction equipment use.
- Any construction wastes generated will be temporarily stored per specifications.

Condition Citations not addressed above

- To ensure that sensitive resources are protected, contact ESH&Q staff upon identification of any unusual conditions or creatures.

Acknowledged:

Suresh Chandra 3/23/09

Suresh Chandra, Project Engineer — Date

Suresh Chandra 3/23/09

Suresh Chandra, Facility Maintenance and Construction Manager and Project Manager — Date

Approved and Dated: Linda Even 3/23/09

Linda Even, Environmental Engineer — Date

Attached: AIC
Drawings and specifications filed with CXA-2009-002 at http://www.jlab.org/ehs/NEPA/

cc: Suresh Chandra
Mary Logue
Bob May
Keith Royston
Rusty Sprouse
Patty Hunt, DOE Site Office
DOELog

March 13, 2009

Jefferson Lab
Thomas Jefferson National Accelerator Facility

NEPA BACKGROUND
Proposed Action Information Checklist

Proposed Action Title: **Construction and Use of ICE Facility**
NEPA Action Managers: **Suresh Chandra**

3/23/09

NEPA Action Funding: **GPP Funding**

Total Estimated Cost: **$1,000,000**

Estimated Activity Start Date: April 2009

Information Compiled by: Suresh Chandra, Linda Even, and Bert Manzlak

General Information:
Are the described actions part or parts of an ongoing EA or other NEPA activity?
Yes X No
Explain: Actions are covered in the 1987 EA and in the DOE-GEN-012 CX.

Are any extraordinary circumstances related to these actions?
Yes X No
Explain: Multiple deep pits and a long deep channel in a highly developed area.

Are actions connected to other actions with potentially significant impacts?
Yes X No
Explain: Will use large amounts of power and cryogens.
Targets will be used in the already operating Hall B.

Location for the Proposed Action:
In the existing north annex of the Test Lab and a small addition will be located on the north and east in the paved area adjacent to the Test Lab (Bldg. 58).

DESCRIPTION OF THE PROPOSED ACTION

Provide a narrative description of the physical activities involved in setting up and/or performing the proposed activities. Include construction and operations and primary equipment to be used. Address timeframes.
Describe the magnitude of the activity.
Provide as much quantitative information as possible relevant to the overall impact of the project on the environment.

The proposed action is the modifications to an existing building and construction of an adjacent structure and the use of the remodeled and new structures to house the apparatus to create HD (Hydrogen Deuterium) ICE targets. The existing building will have 5 pits from 3' to 5' in size and from 3' to 10' deep. There will also be one 50' long 1' deep trench. The new addition building height is about 13'.

The ICE apparatus, to be installed in the new facility, is being moved from the Brookhaven National Lab, where it is no longer required.

The facility will use modified existing workspace and the new addition will be constructed on north of existing building . This site is located on the DOE property in and adjacent to the Test Lab annex on the north side of Building 58. Existing roadways and paved areas will serve as pathways for construction and planned building use.

A total of under 2500 SF of area will be disturbed. At a minimum erosion and sediment control measures will be placed near the perimeter of the affected area. Excavated earth will be inspected for use on-site or be removed from the site.

The project site drains to Brick Kiln Creek. There will be minimal reduction in storm water runoff downstream of the project. No mitigation due to this minimal effect is required.

Construction is expected to be accomplished in the April – October 2009 time frame.

The facility will serve as a target and equipment building and assembly and prototyping area as is already being done in the Experimental Equipment Lab (Building 90.) The differences will be that a regular source of Low Conductivity Water (LCW) and Chilled Water will be required to support making HD (hydrogen deuterium) targets. As well, gaseous hydrogen and helium will also be stored and used in the process to make the HD targets.

Activities

1. Installation of Erosion and Control measures as necessary.
2. Renovation of existing Test Lab annex
3. Excavation of foundations and pits
4. Concrete work
5. Erection of building addition
6. Removal of all debris to off site location
7. Jefferson Lab use of building for creating and prototyping targets and target assemblies

JUSTIFICATION AND NEED FOR THE PROPOSED ACTION/PROJECT

What problem is this action intended to solve, and how will this action solve it?
What alternative solutions to this particular problem exist? Are there different technologies or techniques that could also solve the problem? If so, why were they rejected?
Were alternative sites for this project considered? If so, why were they rejected?
What would be the consequence(s) of taking NO ACTION toward the problem?

There is a need for this type of target and Brookhaven National Lab is providing the apparatus.

DESCRIPTION OF THE AFFECTED ENVIRONMENT AND SAFETY AND HEALTH ISSUES

Would any part of this activity involve work outside existing buildings? YES
If YES, provide a general description of the affected area and the geographic location. Indicate the entire extent of the project on the appropriate map.
Has the affected area ever been used as a chemical dispensing area, waste or product storage area, or been the site of any chemical spills? If so, describe.
Consider below ground effects, surface effects, and above ground effects.

The existing site is a paved asphalt parking lot. Adjacent facilities include: buildings, helium storage tanks, cooling towers, and utility distribution.

This area does not have a history of chemical spills. An underground oil storage tank had been found (and removed) just north of this site.

Contractor trailer and stockpile locations will be in the parking lot just west of the site. Minimal improvement to storm water drainage are needed.

As the area is already disturbed, there are no special concerns or environmental effects due to the construction of this facility. Refer to the Checklist below for the environmental effects from both construction and operation of the facility.

The Nuclear Physics Division will manage the building and will develop building protocols that address the use of the building for its intended purpose.

POTENTIAL ENVIRONMENTAL EFFECTS CHECKLIST

[Consider all activities that will be part of or necessary in support of this project. Include any work to be performed by subcontractors.]

1. ACTIVITY: The primary and related activities for this project would be:

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Indoor Bench-Scale Research	
	X		Indoor Pilot-Scale Research	
	X		Outdoor Research	
	X		Technology Development	
	X		Technology Demonstration	
	X		Chemical/Physical Analysis	
	X		Maintenance / Modification	
	X		Fabrication	
	X		Production	
X			Routine Operation	ICE target fabrication and prototyping such as already done in the EEL
	X		Non-routine Operation	
	X		Renovation Indoors	

Yes	No	Unc	ACTIVITY	EXPLANATION
X			New Construction	
	X		Transportation On-site	
X			Transportation Off site	Construction subcontractor activity. Operations: standard delivery of materials and equipment through normal channels.
	X		Clearing / Removal of Vegetation	
	X		Other	

2. Industrial Safety: Would activities (during construction or during operations) involve any of the following:

Yes ☒ No ☐ Uncertain ☐

Explain:

Yes	No	Unc	ACTIVITY	EXPLANATION
X			Excavation/Trenching/ Clearing [indicate total area affected]	Remove asphalt and foundation excavation
X			Utilities Lockout/ Tagout	Installation of new transformer
X			Crane Operations	For operation of the Facility
X	X		Welding / Cutting	For construction
	X		Confined Space Entry	
X			Blocking of Roads	For construction
X			Use of Scaffolds	
X			Use of Fall Protection	For construction
	X		Use of Explosives	
	X		Use of Corrosives	
	X		Use of Incompatible Chemicals	
X			Use of Compressed Gas Cylinders	For operation – gaseous hydrogen and helium for targets
	X		High Operating Pressures	
	X		X-Rays	
	X		Radiation Protection	
	X		Other	

3. INDUSTRIAL HYGIENE PROTECTION:

Yes ☒ No ☐ Uncertain ☐ *Not Applicable* ☐

Yes	No	Unc	ACTIVITY	EXPLANATION

Yes	No	Unc	ACTIVITY	EXPLANATION
X			High Noise Level	Pump Room
X			Extreme Temperature	For operation – HD ICE target fabrication/cryogen use
	X		Non-ionizing Radiation	
	X		Ionizing Radiation *[refer to #10]*	
	X		Ergonomic Situations	
	X		Respirator or Other Air Purifying Device	
	X		Anti-contamination Protective Clothes	
		X	Confined Space	To be determined for the pits.
	X		Sanitation	
	X		Other	

4. RESPIRATORY PROTECTION:

Yes ☒ No ☐ Uncertain ☐ *Not Applicable* ☐

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Abrasive Blasting	
	X		Acid or Alkali Cleaning of Metals	
	X		Degreasing	
	X		Decontamination	
	X		Use of Coolant and Cutting Fluids	
X			Welding, Cutting, or Brazing	For construction
X			Grinding, Polishing, or Buffing	For construction
	X		Metal Thermal Spraying	
X			Painting	Building structure
	X		Electroplating	
	X		Heat Treatment of Metal Alloys	
	X		Boiler Deslagging	
	X		Furnaces	
	X		Hoods	
	X		Respirator or Other Air Purifying Devices	
	X		Other, including work with radioactive materials	

5. MATERIALS: Would any of the following be encountered (E), handled (H), stored (S), or used (U) or disposed (D) during any phase of the project?

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Fissionable Materials	
	X		Radioactive Materials	
	X		Hazardous Materials	
	X		Mixed Materials (Haz & Rad)	
	X		Toxic Materials	
	X		PCBs	
X			Oils	Construction - Subcontractor equipment, Operations - none
	X		Asbestos	
	X		Fibrous Insulation	
	X		Organic Chemicals	
	X		Heavy Metals	
X			Compressed Gases	For operation – hydrogen and helium
	X		Pesticides / Herbicides	
X			Petroleum	Excavator and crane use during construction
	X		Other	

6. EQUIPMENT: Would any of the following types of oil-containing equipment be used during any phase of the project?

Yes	No	Unc	ACTIVITY	EXPLANATION
X			Transformers	Permanently installed for operation of new facility
	X		Capacitors	
	X		Hydraulic Presses	
	X		Other Hydraulic Equipment	
	X		Large Light Ballasts	
		X	Vacuum Pumps	For operation – to be determined
	X		Other	

7. LIQUID WASTES: Would the project involve disposal or discharge of liquid wastes into any collection and/or treatment systems? What and how much?

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Sanitary Wastewater	
	X		Low-Level Rad Waste	
		X	Process Waste	For operation – process water is a closed loop system. No waste

Yes	No	Unc	ACTIVITY	EXPLANATION
				water is expected.
X			Other Liquid Waste, e.g. sump discharges	Sump discharge to sanitary sewer
	X		Discharge to Soil	
X			Storm Sewer / Surface Water	Roof drains
	X		Other	

8. SINKS/DRAINS: Would any of the following be present in the project area? What and how much?

Yes	No	Unc	ACTIVITY	EXPLANATION
X			Sinks	Two sinks
X			Sumps	
	X		Floor Drains	
X			Fume Hood Drains	
X			Storm Drains	
	X		Other	

9. SOLID WASTES: Would solid wastes be generated (G), stored (S), or disposed (D) of as a result of this project? What, how much, and characteristics, if known?

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Asbestos	
	X		Radioactive	
	X		RCRA Hazardous	
	X		Mixed	
	X		Non-hazardous	
	X		Radioactively Contaminated Wipes	
	X		Contaminated Wipes	
	X		Biohazard Wastes	
	X		Oily Wastes	
X			Other	Construction debris, nothing harmful For operation – general debris, same as EEL

10. AIRBORNE EMISSIONS: Would the project generate airborne emissions?

Yes	No	Unc	ACTIVITY	EXPLANATION

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Radioactive *[provide dose levels to workers/public]*	
	X		Hazardous or Toxic	
	X		Mixed	
X			Other	Construction dust For operation – no emissions from hydrogen and helium

11. POLLUTION PREVENTION (P2): Would any of the following waste minimization & P2 methods be applicable and considered for use for the proposed project?

Yes	No	Unc	ACTIVITY (Accel. & Physics Div practices)	EXPLANATION
	X		P2 Practices	
	X		Waste Volume Reduction	
	X		Waste Toxicity Reduction	
	X		Waste Segregation	
	X		Equipment Reuse	
	X		Materials Recycling	
	X		Product/ Materials Substitution	
	X		Inventory Control	
	X		Energy Conservation	
	X		Other	

12. OUTDOOR STORAGE: Would the project utilize tank, drum, bottle or other storage of any materials?

Yes ☐ No ☒ Uncertain ☐ ***Not Applicable*** ☐

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Radioactive	
	X		Hazardous or Toxic	
	X		Mixed	
	X		Flammable Materials	
	X		Reactive Materials	
	X		Corrosive Materials	
	X		Explosive Materials	
	X		Shelf Chemicals	

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Old Chemicals	
	X		Oil	
	X		Pesticides / Herbicides	
	X		Petroleum	
	X		Other	

13. CHEMICAL OR BIOLOGICAL AGENT USE: Will this project result in the storage and/or use of chemicals or biochemical agents in the workplace?

Yes ☐ **No ☒** Uncertain *Not Applicable*

14. ACCUMULATION, TREATMENT, OR RECYCLE AREAS: Would the project involve any of the following? Describe and quantify.

Yes ☐ **No X** ☐ Uncertain ☐ *Not Applicable* ☒

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		RCRA Satellite Areas	
	X		RCRA Central Accumulation Area	
	X		Laundry Recycle	
	X		Radioactive Material Storage	
	X		Radioactive Waste Storage	
	X		Other	

15. BELOW GROUND STORAGE: Would the project utilize below ground equipment or tanks for storage, control, or transport of materials?

Yes ☐ **No ☒** Uncertain ☐ *Not Applicable* ☐

16. RADIOLOGICAL AREAS: Would the project be performed in any of the following radiological areas? Indicate locations, if appropriate.

Yes ☐ No ☒ Uncertain ☐ *Not Applicable* ☐

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Low-Level Radiation Source Area	
	X		High Radiation Area	
	X		Regulated Area	

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Airborne Activity Area	
	X		Radiation Area	
	X		Very High Radiation Area	
	X		Contamination Area	
	X		Respirator Area	
	X		Other	

17. RADIATION PROTECTION CONTROLS: Would any of the following protective or administrative controls be involved with the project? Will the project result in any exposure of workers or the public to radiation? If so, indicate dose levels.

Yes ☐ No ☒ Uncertain ☐ ***Not Applicable*** ☐

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Radiation Work Permit	
	X		Radiation Worker Training	
	X		Respirator or Other Air Purifying Device	
	X		Anti-contamination Protective Clothes	
	X		Supplementary Dosimetry	

18. RADIATION SOURCES: Would the project involve the use or storage of any radiation sources?

Yes ☐ **No** ☒ Uncertain ☐ *Not Applicable* ☐

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		X-Ray Machine / Generator	
	X		Sealed Radioactive Material	
	X		Accelerator	
	X		Unsealed Radioactive Material	
	X		Ultraviolet Light Sources	
	X		Other	

19. OPERATIONAL READINESS: Would the activity involve one or more of the following?

Yes ☐ No ☒ Uncertain ☐ *Not Applicable* ☐

Yes	No	Unc	ACTIVITY	EXPLANATION
X			Safety Review	For operation – general ES&H factors will be reviewed under EH&S Manual Chapter 3120.
	X		Safety Class Items	
	X		Items under Configuration Control	
	X		Glove Boxes	
	X		Other	

20. UNCONTROLLED RELEASES: Would measures be in place to manage possible uncontrolled emissions, discharge, or spills during any phase of the project?

Yes ☒ No ☐ Uncertain ☐

Explain: Construction subcontractor to provide secondary containment for fuel storage and install and maintain erosion and sediment control measures.

For operations (inside building) - oil containing equipment to be kept clear of floor drains/pits

21. EMERGENCY RESPONSE: In the event of a release, would the following be readily available in the work area?

Yes	No	Unc	ACTIVITY	EXPLANATION
X			MSDS Information	For construction - Subcontractor's responsibility. For operations - Building manager to provide.
X			Spill Control and Containment Materials	For construction - Subcontractor's responsibility. For operations - Building manager to provide.
X			Phone Numbers	For construction - Subcontractor's responsibility. For operations - Building manager to provide.
X			Portable Fire Extinguishers	For construction - Subcontractor's responsibility. For operations - Building manager to provide.
X			Warning Signs	For construction - Subcontractor's responsibility. For operations - Building manager to provide.
	X		Other	

22. PERMITTING: Would the project/activity require application for or modification of any of the following permits?

Yes	No	Unc	ACTIVITY	EXPLANATION

Yes	No	Unc	ACTIVITY	EXPLANATION
X			Excavation / Penetration	Will be issued by SOTR
	X		Burning Permit	
	X		Radiation Work Permit	
	X		Safety Work Procedure	
	X		Air Permit	
	X		Fugitive Emissions Permit	
	X		Existing VPDES Permit	
	X		Permit for Groundwater Dewatering	
	X		RCRA	
	X		Corps of Engineers	
	X		NESHAPs	
X			Stormwater Management	General requirements under VAR040079 for subcontractor to provide training to prevent pollution of storm water.
	X		Stormwater During Construction Activities	Not applicable.
	X		Other	

23. GROUNDWATER PROTECTION: Does the proposed project have any of the following existing or planned features or conditions? Will this project result in any activation of soil or groundwater?

Yes ☐ **No** ☐ Uncertain ☒ *Not Applicable* ☐

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Existing Wells or Boreholes	
	X		Existing Contaminated Groundwater	
X			Excavations requiring Dewatering during Construction	Multiple pits and trenches.
	X		Devices that could alter Groundwater Levels	
	X		New Monitoring Wells	
	X		New Soil Borings	
		X	Other	Possible sump dewatering.

24. PLANT/ANIMAL SPECIES: Has the project area been surveyed for plants (or habitats of plants) or animals (or habitats) and any found?

Yes ☐ No ☐ Uncertain ☐ *Not Applicable* ☒

Explain: Existing asphalt parking lot.

25. AQUATIC SPECIES: Have waters in the project area been surveyed for aquatic species listed as follows?

Yes ☐ No Uncertain ☐ *Not Applicable* ☒

26. HISTORICAL/ARCHEOLOGICAL: Has the proposed site been surveyed for objects of historical/archeological significance?

Yes ☐ No ☐ Uncertain ☐ *Not Applicable* ☒
Explain:

27. FLOODPLAIN: Would the project encroach upon or take place within a floodplain?

Yes ☐ **No** ☒ Uncertain ☐ *Not Applicable* ☐
Explain:

28. WETLANDS: Are the following conditions present at any proposed site?
Note: Wetlands are not limited to standing water. Areas such as low forest, sedge meadows and stream banks may qualify.

Yes ☐ **No** ☒ Uncertain ☐ *Not Applicable* ☐

29. SITE UTILIZATION: Would the proposed project take place in any of the following?

Yes	No	Unc	ACTIVITY	EXPLANATION
X			Developed Site(s)	The site is developed
	X		Disturbed Site(s)	
	X		Undeveloped Site(s)	
	X		Pristine Area(s)	
	X		Other	

30. EXCAVATION ACTIVITY: If the project will require any construction activity involving excavation or soil disturbance, estimate the:

Area to be affected: under 2,500 SF

Volume of spoils: 100 CY

Expected disposition of spoils: Subcontractor will recycle asphalt if determined economically feasible. Any excess soil will be inspected for use on-site or disposed of off site.

What control measures will be used to avoid soil erosion? How far away are the nearest surface water bodies or drainage channels (including potential wetlands)?

The local stormwater drainage channel paralleling Hadron Drive is adjacent to the project worksite. There are no wetlands in the area.

Subcontractor will install and maintain erosion and sediment control measures and keep disturbance within the construction limits.

31. ENVIRONMENTAL ASPECTS CHECKLIST

ASPECTS: The environmental aspects associated with this project are:

Aspect Category (air, wastewater, haz waste, solid waste, spill potential energy/nat. resources, other)	Aspect	Significant ? (Y/N)	SOP number and name	Engineering Control (if needed)
Construction				
Spills	Oil or Oily Water spills	No	N/A	Secondary containment of oil or other liquids
Construction Wastes	Non-hazardous waste	No	N/A	Off site disposal as in specifications
Operations				
Chemical Use & Storage	Compressed Gases (excluding cryogens)	No	N/A	
Chemical Use & Storage	Cryogens	No	N/A	
Electricity Usage	Sitewide – Power Consumption	No	N/A	
Water Usage	Sitewide - Deionized/ Low Conductivity Water Systems	No	N/A	
Recyclables	Scrap Metal, including Wire	No	N/A	
Recyclables	Packaging Materials (including Corrugated Cardboard)	No	N/A	
Regulated Waste	Rags, solvent soaked	No	N/A	
Refuse	Litter & Trash (e.g. packaging materials and waste paper)	No	N/A	

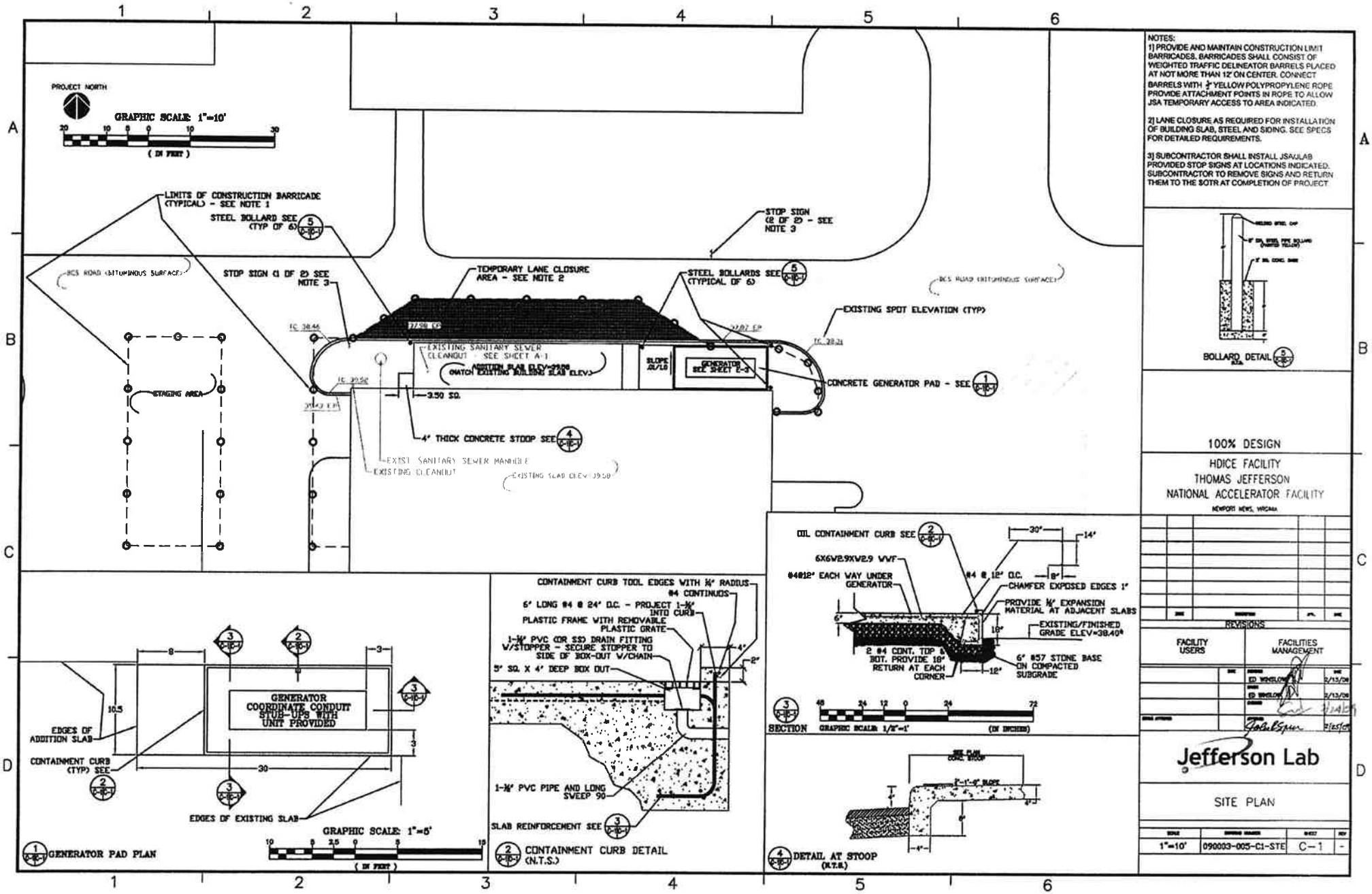
Provide any other project detail or explanation below:

There is no general soil disturbance as the area is paved. Excavated asphalt and the soil will be removed as it is excavated.

The project will not disturb any land that isn't within the limits of construction. The project may make temporary use of adjacent paved or gravel areas.

Use of facility will follow good environmental practices, including practicing pollution prevention including minimizing resource usage and recycling waste materials as possible.

Facilities Management & Logistics has completed this to the best knowledge of the construction project scope and by the Nuclear Physics and the Jefferson Lab Environmental Engineer for future building usage. If conditions or project scope change or changes become evident, updated information will be provided to the Jefferson Lab Environmental Engineer.


PROJECT NORTH
GRAPHIC SCALE: 1"=10'
(IN FEET)
LIMITS OF CONSTRUCTION BARRICADE (TYPICAL) - SEE NOTE 1
STEEL BOLLARD SEE (TYP OF 6)
STOP SIGN (2 OF 2) - SEE NOTE 3
STOP SIGN (1 OF 2) SEE NOTE 3
TEMPORARY LANE CLOSURE AREA - SEE NOTE 2
STEEL BOLLARDS SEE (TYPICAL OF 6)
BCS ROAD (BITUMINOUS SURFACE)
EXISTING SPOT ELEVATION (TYP)
EXISTING SANITARY SEWER CLEANOUT - SEE SHEET A-1
GENERATOR SEE SHEET C-3
CONCRETE GENERATOR PAD - SEE
3.50 SQ.
4" THICK CONCRETE STOOP SEE
STAGING AREA
EXIST SANITARY SEWER MANHOLE
EXISTING CLEANOUT
EXISTING SLAB ELEV=39.50
NOTES:
1) PROVIDE AND MAINTAIN CONSTRUCTION LIMIT BARRICADES. BARRICADES SHALL CONSIST OF WEIGHTED TRAFFIC DELINEATOR BARRELS PLACED AT NOT MORE THAN 12' ON CENTER. CONNECT BARRELS WITH 1/4" YELLOW POLYPROPYLENE ROPE PROVIDE ATTACHMENT POINTS IN ROPE TO ALLOW JSA TEMPORARY ACCESS TO AREA INDICATED.
2) LANE CLOSURE AS REQUIRED FOR INSTALLATION OF BUILDING SLAB, STEEL AND SIDING. SEE SPECS FOR DETAILED REQUIREMENTS.
3) SUBCONTRACTOR SHALL INSTALL JSA/JLAB PROVIDED STOP SIGNS AT LOCATIONS INDICATED. SUBCONTRACTOR TO REMOVE SIGNS AND RETURN THEM TO THE SOTR AT COMPLETION OF PROJECT.
BOLLARD DETAIL
GENERATOR COORDINATE CONDUIT STUB-UPS WITH UNIT PROVIDED
EDGES OF ADDITION SLAB
CONTAINMENT CURB (TYP) SEE
EDGES OF EXISTING SLAB
GRAPHIC SCALE: 1"=5'
(IN FEET)
GENERATOR PAD PLAN
CONTAINMENT CURB TOOL EDGES WITH 1/4" RADIUS
#4 CONTINUOS
6' LONG #4 @ 24' O.C. - PROJECT 1-1/4" INTO CURB
PLASTIC FRAME WITH REMOVABLE PLASTIC GRATE
1-1/4" PVC (OR SS) DRAIN FITTING W/STOPPER - SECURE STOPPER TO SIDE OF BOX-OUT W/CHAIN
5" SQ. X 4' DEEP BOX OUT
1-1/4" PVC PIPE AND LONG SWEEP 90
SLAB REINFORCEMENT SEE
CONTAINMENT CURB DETAIL (N.T.S.)
OIL CONTAINMENT CURB SEE
6X6W2.9XW2.9 WWF
#4@12" EACH WAY UNDER GENERATOR
#4 @ 12" O.C.
CHAMFER EXPOSED EDGES 1"
PROVIDE 1/2" EXPANSION MATERIAL AT ADJACENT SLABS
EXISTING/FINISHED GRADE ELEV=38.40
2 #4 CONT. TOP & BOT. PROVIDE 18" RETURN AT EACH CORNER
6" #57 STONE BASE ON COMPACTED SUBGRADE
SECTION
GRAPHIC SCALE: 1/2"=1'
(IN INCHES)
DETAIL AT STOOP (N.T.S.)
100% DESIGN
HDICE FACILITY
THOMAS JEFFERSON NATIONAL ACCELERATOR FACILITY
NEWPORT NEWS, VIRGINIA
REVISIONS
FACILITY USERS
FACILITIES MANAGEMENT
ED WINSLOW 2/13/08
ED WINSLOW 2/13/08
Jefferson Lab
SITE PLAN
1"=10'
090003-005-C1-STE
C-1

SECTION 015719 - TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 - GENERAL

1.1 APPLICABLE DOCUMENTS

A. 40 CFR 261 Identification and Listing of Hazardous Waste

B. 40 CFR 262 Standards applicable to Generators of Hazardous Waste

C. 40 CFR 265 Interim Status Standard for Owners and Operator of Hazardous Waste Treatment, Storage, and Disposal Facilities

D. The Virginia Erosion and Sediment Control Handbook. (http://www.state.va.us/dcr/sw/e&s-ftp.htm or copies may be obtained from the State of Virginia Soil and Water Conservation Division in Richmond at (804) 786-2064).

1.2 GENERAL

A. Protect the environment and preserve the natural resources during construction. Plan for and provide environmental protective measures to control pollution that develops during normal construction practice. Comply with Federal, State, and Local regulations that pertain to the environment. Prepare and submit an Erosion & Sediment Control Plan for the project. Although the construction work will result in some adverse environmental impacts, the Erosion & Sediment Control Plan shall address each of the following subparts and discuss measures that will be used to meet the requirements.

1.3 REGULATORY DOCUMENTS

A. Jefferson Science Associates (JSA)/Jefferson Lab *Environmental, Health, & Safety (EH&S) Manual.* This manual is accessible electronically through Jefferson Lab's www homepage at http://www.jlab.org/.

1.4 SUBMITTALS

A. PRECONSTRUCTION SURVEY

1. Perform a preconstruction survey of the project site with the SOTR and take photographs showing existing environmental conditions in and adjacent to the site. Submit a report for the record.

B. EROSION AND SEDIMENT CONTROL PLAN

1. Submit your Erosion and Sediment Control Plan to the SOTR within 30 days after subcontract award. Approval of the Erosion and Sediment Control Plan is required prior to performing any work at the site.

2. The Erosion and Sediment Control Plan shall describe the methods and procedures by which the Subcontractor intends to minimize/mitigate adverse impact to the environment resulting from the work. At a minimum, the plan shall include the following:

   a. Identification of the person on site who is responsible for the temporary environmental controls and who can take required corrective actions.
   b. Site Description that describes the pollutant sources such as:
      1) Major earthwork activities.
      2) Nonstorm Water Discharges pipe flushing, hydrostatic testing, vehicle washing, dust control, etc.
   c. Description of controls and measures that will be implemented to control the identified potential pollutants.
   d. Site layout to illustrate location of pollution sources and the temporary environmental controls.
   e. Maintenance and inspection of erosion and sediment control measures.
   f. Dirt and dust control.

C. DISPOSAL DOCUMENTATION

1. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit three copies of report. Include the following information:

   a. Material category (solid waste, savaged, recycled waste, hazardous waste.
   b. Total quantity of waste in tons.
   c. Quantity of waste salvaged, estimated in tons.
   d. Quantity of waste recycled, estimated and/or actual tons.
   e. Total quantity of waste recovered (salvaged plus recycled) in tons.
   f. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

1.5 CLASS 1 ODS PROHIBITION

A. Class 1 ODS as defined in Section 602 (a) of the Clean Air Act shall not be used in the performance of this subcontract, nor be provided as part of the equipment associated with the work. This prohibition shall be considered to prevail over any other provisions, specification, drawing, or referenced document.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 PROTECTION AND PRESERVATION OF NATURAL RESOURCES

A. Restoration – Preserve the natural resources within the project boundaries and outside the limits of permanent work. Restore to an equivalent or improved condition upon completion of work. Confine construction activities to within the limits of the work indicated or specified.

B. Protection of Natural Vegetation – Except in areas to be cleared, do not remove, cut, deface, injure, or destroy trees or shrubs without the Subcontracting Officer's permission. Do not fasten or attach ropes, cables or guys to existing nearby trees for anchorages unless authorized by the Subcontracting Officer. Where such use of attached ropes, cables, or guys is authorized, the Subcontractor shall be responsible for any resultant damage. Replace trees and other landscaping features damaged by activities. Remove displaced rocks from uncleared areas.

C. Protection of Historical and Archaeological Resources – Records indicate no architectural or archaeological resources exist within the limits of construction and previous survey indicates little potential for intact historical resources. However, if cultural materials are discovered in the course of work, carefully protect them in-place and report immediately to the SOTR. Stop work in the immediate area of the discovery until directed by the Subcontracting Officer to resume work. Jefferson Lab retains ownership and control over historical and archaeological resources.

D. Wildlife Protection – It is unlikely that during the course of work that any endangered animal species will be discovered. However, a canebrake rattlesnake, a species listed by the Commonwealth of Virginia as endangered, has been documented within 2 miles of the project area. In the event, a canebrake rattlesnake is discovered during the course of work, attempt not to disturb the snake and notify the SOTR immediately. Virginia Department of Game and Inland Fisheries will attempt to safely capture the animal and remove it to a suitable site.

E. Temporary Construction – Remove traces of temporary construction such as haul roads, work areas, and stockpiles of materials. Restore areas of temporary construction to an equivalent or improved condition as existed before construction activities occurred.

F. Water resources – Perform work in a manner that minimizes adverse environmental impacts on water resources. Take precautions necessary to prevent, contain, and collect a release of fuels, oils, or other hazardous substances on the water. Notify the Subcontracting Officer immediately in the event of a fuel, oil, or other hazardous substance spill.

1. Fuel and lubricate equipment in a manner that protects against spills and evaporation. Provide a temporary berm around temporary fuel and liquid chemical storage tanks to contain the tank contents in the event of a leak or spill.

2. Portable aboveground storage tanks (AST) greater than 660 gallons used for equipment fuel must be registered with Virginia Department of Environmental Quality (DEQ). Subcontractor shall submit AST Registration Form 7570-AST and the registration fee to DEQ prior to mobilization of the AST to the project site.

3.2 EROSION AND SEDIMENT CONTROL MEASURES

A. Burnoff Prohibited – Burnoff of the ground cover is not permitted.

B. Protection of Erodible Soils – Plan and conduct earthwork to minimize the duration of exposure of unprotected soils. Earthwork brought to final grade shall be immediately finished. Protect side and back slopes upon completion of rough grading. Use the following methods to prevent erosion, control sedimentation, and prevent waterborne soil from entering surface waters, ditches, and storm drain inlets:

1. Mechanical Control – Mechanically retard and control the rate of runoff from the construction site in accordance with Virginia Erosion and Sediment Control Manual. This includes construction of diversion ditches, benches, berms, and use of silt fences to retard and divert runoff to protected drainage courses.

    a. Silt fences shall extend a minimum of 16 inches above the ground surface and shall not exceed 34 inches above the ground surface. Filter fabric shall be continuous. When joints are unavoidable, filter fabric shall be spliced together at a support post, with a minimum 6 inch overlap, and securely sealed. A trench shall be excavated approximately 4 inches wide and 4 inches deep on the upslope side of the location of the silt fence. The trench shall be backfilled and the soil compacted and the filter fabric will be embedded in the soil.

2. Maintenance and Inspection – The subcontractor shall maintain the control measures in good and effective operating condition by performing routine inspections and conducting repairs in a timely manner.

3.3 WASTE MANAGEMENT

A. Solid Waste Control – Pick up waste and debris and place in covered containers furnished by the Subcontractor. Empty containers and remove waste and debris from Jefferson Lab property on a regular basis. Remove waste without spilling or contaiminating streets, the site, and other areas. Offsite disposal shall be at a licensed landfill and shall comply with all local, state and federal requirements.

B. Recyclable Waste – Subcontractor shall collect all recyclable waste and dispose of at designated dumpsters on-site or at approved off-site facility. On site dumpsters are available for paper, cardboard, scrap metal, and aluminum. Subcontractor is responsible for properly sorting the material, breaking down the cardboard, and hauling and placing the waste in the proper recycle dumpsters. For recyclable material disposed of off-site, the Subcontractor shall provide documentation on the disposal weights.
    1. Recycle Goals: Jefferson Lab's goal is to salvage and recycle as much nonhazardous demolition and construction waste as possible.

    2. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
    3. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.

C. Salvaged Materials – Salvaged materials are demolition and construction waste that is reused in this Project, sold to individuals and organizations and/or donated to individuals and organizations.

D. Control and Disposal of Hazardous Waste – Hazardous wastes are defined in 40 CFR 261. The Subcontractor shall identify all activities that may generate hazardous waste and provide documented waste determination for the waste stream to the Subcontracting Officer. Hazardous wastes that are produced as a result of performing work under this subcontract shall be handled, stored, transported, and disposed of according to 40 CFR 262, where applicable. Prevent hazardous wastes from entering the ground, drainage areas, and surface waters. Immediately

notify the Subcontracting Officer of hazardous material spills. Hazardous wastes generated within the confines of Government facilities shall be identified as being generated by the Government. All necessary documentation including hazardous waste manifests shall be signed by an authorized representative of Jefferson Lab prior to removal of waste from the site. No hazardous waste shall be brought onto Jefferson Lab property.

E. Disposal Fees and Required Tests – The Subcontractor is responsible for all associated fees and required testing, if any, to properly dispose of material and/or excess soil removed from Jefferson Lab property.

3.4 VOLATILE ORGANIC COMPOUNDS (VOC)

A. The Subcontractor and all lower tier subcontractors are required to comply with the local VOC laws and regulations.

3.5 DUST CONTROL

A. Keep dust down at all times including non-working hours. Sprinkle or treat, with dust suppressants, the soil at the site, haul roads, and other areas disturbed by operations. Dry power brooming is not permitted; instead use vacuuming, wet mopping, or wet brooming. Air blowing is permitted only for cleaning non-particulate debris such as steel reinforcing bars. When sandblasting, provide tarp drop cloths and windscreens under and around blasting operation to confine and collect dust, sand, paint, and debris. Concrete blocks, concrete, and asphalt shall be wet cut. Do not unnecessarily shake bags of cement, concrete mortar, or plaster.

3.6 NOISE CONTROL

A. Make the maximum use of low-noise emission products, as certified by the EPA.

END OF SECTION 015719