ENVIRONMENTAL COMPLIANCE CHECKLIST

1. ADMINISTRATIVE INFORMATION

Project Title: Generation and Characterization of Magnetized Bunched Electron Beam from DC Photogun for MEIC Cooler Date: Jan 05, 2016

Charge No. (if	Estimated Start Work Date: Feb 01, 2016	Individual Submitting Checklist: Riad	Suleiman	
applicable):				
Project Engineer/Manager	:: Riad Suleiman	Bldg/MS/Phone No/Fax No.: TL 1226, (757) 269-7159		
		_		
Project Location (Plant, S	ite, Area, Bldg No.): LERF Gun Test Stand	Environmental Compliance Rep:	Safety Advocate:	
-	-		Jennifer Williams	

2. LOCATION OF PROPOSED ACTION: The work will be carried out at Jefferson Lab LERF Gun Test Stand (GTS). No construction activities are planned.

3. WORK SCOPE DESCRIPTION: This LDRD aims to generate magnetized electron beam from a DC high voltage photogun and measure its properties. We will design new solenoid magnet to provide 0.2 T field at photocathode. This magnet will need low-conductivity water (LCW) for cooling and will be powered by 450 A and 150 V power supply. For first two years, we will use the standard GTS high voltage power supply (5 mA, 600 kV). In third year, we will use another supply capable of delivering 32 mA at 225 kV. Beamline will be modified to add slits, YAG viewers and three quads. We plan to use base GTS lasers: Antares Laser (15 Hz, green, 15 mW) and Verdi Laser (DC, green, 5 W).

We will use simulation tools to create a physics design for beamline so we can locate magnets and diagnostics at their optimum positions. Simulation of different operating scenarios of bunch charge, magnetization and bunch shape will be benchmarked against measurements.

More information can be found at: https://wiki.jlab.org/ciswiki/index.php/Magnetized_Beam_LDRD

Below if a general list of activities to occur associated with the proposed project:

✓4. ENVIRONMENTAL SUMMARY: Indicate if this action may generate, use, or cause disturbance to any of the following (please check all that apply). Unchecked items indicate that there are "no issues." If unknown, please check the item and explain in Item 5 below.

1.	Air emissions (fugitive, stack, rad, etc.)	11. Radiological area	√	21. Clearing or excavation (>5 acres)
2.	Asbestos	12. Solid Waste Management Unit/ CERCLA Area of Contamination		22. Threatened or endangered species
3.	Ozone-depleting substance (CFCs, HCFCs)	13. Solid waste		23. Floodplain/wetland/streams
4.	Liquid effluents	14. Mixed waste		24. Prime agricultural lands
5.	Drinking water system	15. Radioactive waste/soil		25. Archeological/cultural resources
6.	Surface/stormwater	16. Hazardous waste (RCRA, PCB, Asbestos)		26. Transportation issues
7.	Water use/diversion	17. Chemical/petroleum storage/use		27. Pesticide/herbicide use
8.	Groundwater	18. Environmental Elevated Noise Level		28. Off-site releases (Environmental Justice Concern)
9.	Sewage System	19. Clearing or excavation (<1 acre)		29. Other

10. Tanks (under- or above-ground)	20. Clearing or excavation (1-5		
	acres)		l

Page 2

5. EXPLAIN THOSE AREAS IDENTIFIED IN ITEM 4 THAT WERE CHECKED AND ANY HAZARD CONTROLS TO BE EXECUTED: The Gun Test Stand will be operated under an approved Operational Safety Procedure (OSP) that addresses all radiological issues related to this project.

 SF_6 gas is used as an electrical insulating gas inside the pressurized (10 psi) high voltage power supply and gun tanks. SF_6 is a powerful green house gas (23,900 times worse than CO_2) that must be re-used to avoid releasing it into the atmosphere when there is a need to open the tanks, i.e., gun or high voltage power supply maintenance. Handling of SF_6 is described in an approved OPS.

6. POLLUTION PREVENTION/WASTE MINIMIZATION/AS LOW AS REASONABLY ACHIEVABLE (ALARA): No radioactive waste will be generated.

7. DESCRIPTION OF WASTES AND DISPOSAL METHODS: Describe the type of waste (Radioactive, RCRA, Mixed, etc.); the waste form (solid, liquid, gas, etc.); approximate amount of waste expected to be generated; waste disposal method (landfill, storm sewer, other); and, if known, the disposal container (boxes, drums, etc.).

Waste Type	Check	Waste Form (Solid, Liquid, Gas, Sludge) (list all that apply)	Amount Expected to be Generated (specify units of measure)	¹ Waste Disposal Method (landfills [specify], sanitary sewer, etc.) and Disposal Container (boxes, drums, etc.)
Radioactive				
RCRA				
TSCA				
Mixed				
Sanitary/Industrial				
Biohazard				
РСВ				
Oil/Oily				
Asbestos				
Mercury				
Beryllium				
Organics/Solvents				
Heavy Metals				
Construction Debris				
Soil Debris				
				•

¹ Completion of this column may require input from Waste Operations or Waste Disposition Projects personnel.

Other		

8. PROJECT SIGNATURE: This section is to be completed by the Project Evaluator (individual completing this checklist).

I have reviewed this action and to the best of my knowledge have answered all questions completely to describe the proposed action.

Riad Suleiman

Date: ___Jan 19, 2016__

Page 3

Project Signature: _

Please note: Any changes or unanticipated events to the project must be documented by updating this form.

This section to be completed by the Environmental Compliance Representative

9. ENVIRONMENTAL COMPLIANCE (EC) REPRESENTATIVE:

I have reviewed the proposed project and based on the actions described in this checklist, the following hazard controls should be implemented.

Check	Environmental Compliance Hazard Control Issue	Hazard Control Measure(s) to be Implemented
	Air Permit	
	- Exempt Air Emission Source	
	- Fugitive Dust Suppression	
	RCRA Permit	
	- Saterine Accumulation Area	
	- Closure Plan	
	NPDES Permit	
	- Stormwater Notice of Intent	
	Section 404 Type Permits	
	-Aquatic Resources Alteration Permit	
	-TVA 26(a) Permit	
	-Corps of Engineer Permit Watts Bar Intergraphy Group	
	-Other	
	Excavation/Penetration Permit	
	Asbestos Notifications	
	-Building Demolition Notice of Intent	
	NESHAPs (RAD)	
	Stormwater Controls	
	Spill Prevention	
	Floodplain/Wetland	
	Level of NEPA Documentation Required	
	(specify NEPA reference used)	
	Historical/Cultural Resource	
	Environmental Justice	
	Hazardous Materials (HMIS Inventories)	
	Waste Management	
	- Approved Treatment, Storage, Disposal and	
	Recycle Facility (TSDRF)	
	Safe Dam (FERC)	
	HSWA, SWMUs	
	Other	

EC Rep Signature: _____

Date: