

BNL Static Magnetic Fields Exposure Form

Part A: Source Hazard Assessment Record

I. Source Identification									
	ilding: <mark>727</mark>	source):	Room or Area (location of source): Magnetic Measurements Laboratory						
Identifier/ Name of Source:									
Various magnets, in storage test, and assembly									
Status of Source Usage (check all that apply):									
[] Intermittent use [] One-time use	e [] Other:								
Check or Describe Use or Process:	lear Magnetic Re	sonance \square	lon pumps						
	nets								
	dical device		Electromagnet I						
	ctron microscope	Ц	Tool Chuck/clan	np					
[] Other (specify):									
II. Exposure Summary [Complete Part B: Field Strength Measurement Record or attach documentation from manufacturer]									
		BNL Expos	sure Limits**						
Target Body Area		/A-8		iling					
	(mT)	(G)	(mT)	(G)					
Cardiac Pacemaker & Ferromagnetic Objects*			0.5	5					
Whole Body (Torso or Head)	60	600	2,000 (2 T)	20,000					
Extremities (Limbs)	600	6,000	5,000 (5 T)	50,000					
*Ferromagnetic Objects (Ceiling), including medical implants and prostheses, may be affected by fields. Additional evaluation is required. ** TWA-8 = (B ₁ t ₁ + B ₂ t ₂ + + B _n t _n) / 480 minutes B = Flux Density [mT] t = time of exposure [minutes]									
Maximum Exposure Potential surveyed applicable to worker exposure (mT): Extremities could be exposed to 1.3 T, whole body exposure could be > 60 mT									
III. Exposure Hazard Evaluation: Indicate worker exposure potential on the OMC Job Assessment Form or OMC Static Magnetic Field Questionnaire form.									
Flux Density									
1a. ☐ Flux Density ≥ 0.5 mT (5 Gauss). No potential for individuals with medical electronic devices or ferromagnetic implants/prostheses* to be exposed above 0.5 mT (5 Gauss).									
 1b. ☐ Flux Density ≥ 0.5 mT (5 Gauss). Access to > 5G for individuals with medical electronic devices or ferromagnetic implants/prostheses* is not permitted. 									
2a. ⊠ Flux Density ≥ 60 mT (600 Gauss) - Whole Body. No potential to exceed the 8 hours TWA.									
2b. ☐ Flux Density ≥ 60 mT (600 Gauss) - Whole body. Potential to exceed the 8 hours TWA. Controls must be used.									
3a. ☐ Flux Density ≥ 600 mT (6000 Gauss) - Limbs. No potential to exceed the 8 hours TWA.									
3b. ☐ Flux Density ≥ 600 mT (6000 Gauss) - Limbs. Potential to exceed the 8 hours TWA. Controls must be used.									
 4a. ☐ Flux Density ≥ 2T (ceiling) - Whole Body. No potential to exceed the BNL ceiling. 4b. ☐ Flux Density ≥ 2T (ceiling) - Whole Body. Potential to exceed the BNL ceiling. Controls must be used. 									
5a. ☐ Flux Density ≥ 5T (ceiling) - Whole Body. Potential to exceed the BNL ceiling. Controls must be used.									
5b. ☐ Flux Density ≥ 5T (ceiling) - Limbs. No potential to			must be used.						
* Medical electronic devices include cardiac pacemake				ps.					
Ferromagnetic implants/ prostheses include aneurysi	n clips, replaceme	ent hips.							

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4. Describe job/task and potential for employee exposures (e.g., type of work performed around source,								
	pent in fields [hours/day] and method of determine							
, ,	assembly of magnetic devices, the mapping of magnetic fields, and adjustment for field tuning.							
	Based on discussions with personnel and measurements of devices, exceeding 8-hr TWA or							
ceiling is not likely. This is due to the fact that the devices assembled and tested exhibit magnetic								
fields that drop off very rapidly with increasing distance from the magnets.								
5. Frequency of exposure (e.g., # days per year or month, # tests per year, in continuous use, etc.): ~30 days/year extremities exposed to elevated magnetic fields during processes described above.								
Whole body exposure could be above 60 mT for a few minutes while carrying a magnet. Balance of								
time personnel are conducting remote measurements, fabricating fixtures and setting up components.								
•	neering & Administrative Controls	Ŭ			0 1 1			
Precautions During U	Jse (check all that apply):							
Signs Signs	☐ Lights	☐ Othe	er:					
□ Barriers	☐ Restricted access							
☐ Rotation of workers	☐ Working when de-energized							
	ctools							
☐ Physical indicator of frinclips or equivalent)	ge fields (e.g., use of string with paper							
Written Documentation: □ Experimental Review (Work Planning and Control for Experiments and Operations Subject Area) □ Work Planning and Control (Work Planning and Control for Experiments and Operations Subject Area) □ Written SOP (describe):								
Other kinds of workers who may require information/written documentation/training to enter this area:								
Checklist:								
Employee training:		□ Dept	□ Dept/Division-Specific Training					
Supervisors training:	⊠ Static Magnetic Fields Web Course	□ Dept	□ Dept/Division-Specific Training					
Training required to be link	ked to Job Training Analysis for affected wo	orkers:		⊠ yes	□ no			
Worker evaluation required by OMC (all workers exposed to ≥ 5G)				⊠ yes	□no			
				□ yes	□no			
V. Initial Assessment								
Completed by: L. St	iegler		Date:	10/30/08				
Reviewed by ES&H C	Coordinator: L. Stiegler		Date:	10/30/08				
Forward the original form to the Static Magnetic Fields Subject Matter Expert, copies to your ES&H Coordinator and Safety & Health Representative. Retain a copy in your files. Update and resubmit the assessment when changes occur.								

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