

NUCLEAR SAFETY DIRECTORATE - BUSINESS MANAGEMENT SYSTEM		
BUSINESS SUPPORT <b>IDENTIFYING AND CONTROLLING RISKS FOR NSD STAFF VISITING NUCLEAR SITES</b>		<b>BSS/HRM/010</b>
		ISSUE 003
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## 1. Purpose & Scope

1.1 The purpose of this document is to list in table form the hazards and the assessed risks which managers and staff need to consider and take precautions against when visiting Nuclear Sites.

## 2. Policy

2.1 NSD management as employer need to satisfy itself that there are appropriate safeguards for NSD staff visiting sites. All staff have a responsibility to ensure their own safety and be familiar with the NSD procedures for visiting licensed Nuclear sites. Specific policies have been identified based on the risk assessment. These are aimed at ensuring certain specific precautions are always taken. Where licensee's arrangements are expected to be followed by NSD staff, NSD management must satisfy themselves that they provide adequate safety for such staff.

### Conventional safety training

2.2 All staff who visit sites regularly will received conventional safety training. If staff have not received this training then they must be accompanied when visiting site.

### Visits to site

2.3 All NSD staff who visit sites regularly should be familiar with the site's safety procedures. Staff who are not familiar with these safety procedures must be accompanied whilst on site.

### Protective Equipment

2.4 It is NSD policy that when visiting Nuclear sites protective footwear, hard hats and hearing protection are to be worn where necessary to comply with site safety procedures for the areas visited. Where practicable and appropriate these items will be provided by NSD.

### Radiation and contamination areas

2.5 Staff will not enter areas of plant where contamination and or external radiation levels exceed those in the Ionising Regulations 1999 (IRR's 99), requiring the area to be designated as controlled unless the relevant RPS has agreed the work necessary and a suitable risk assessment has been undertaken. For non-classified inspectors the agreement is given by the RPS signing the dose summary form. For classified inspectors the RPS will need to make specific arrangements for such

agreements.

2.6 Staff will need to co-operate with the licensees as required by Regulation 15 of the IRR's 99. This will normally involve observing the local rules applicable at the site, in particular non-classified inspectors should adhere to a written system of work as appropriate. A model scheme of work for the guidance of both classified and non-classified inspectors is given in **G/BSS/HRM/006** Where such provisions are followed any radiological hazards would not be expected to exceed those given in Annex 1, and so an additional risk assessment by the RPS would not be needed unless there are particular circumstances such as pregnancy (see **BSS/HRM/008**) or the work the inspector intends to do is out of the ordinary.

### **Confined Spaces**

2.7 NSD staff shall not enter a confined space as identified in the Confined Spaces Regs. 1997 without a risk assessment and agreement of the line manager.

### **Falls from height**

2.8 NSD staff shall not access where there is a real potential for them to be injured by a fall from heights without adequate risk assessment and agreement of line manager. Entry to such areas will only be made using permanent access equipment or a scaffold which has been properly erected and maintained.

### **Electrocution**

2.9 NSD staff shall not perform work requiring inspection of live electrical equipment without a risk assessment and agreement of the line manager.

## **3. Responsibilities**

3.1 **Unit Heads of Site Inspection Units shall** ensure that their licensees safety procedures which NSD staff rely on are suitable and adequate for the safety of NSD staff visiting licensed sites.

3.2 **NSD Health and Safety Manager shall** monitor NSD's evaluation of the licensees safety procedures and ensure that any feedback which may affect the NII risk assessment is implemented.

3.3 **Line managers and staff shall** use the attached table to assess the risks which they may meet when visiting Nuclear sites.

3.4 **Line managers shall** ensure that control measures identified are followed.

3.5 **Line managers shall** be satisfied that their staff who visit sites regularly are competent and have received appropriate training. (NSD based or licensee based).

3.6 **The Radiation Protection Advisor shall** identify radiation and/or contamination levels above which, entry into the area by NSD staff will require a risk assessment and agreement of RPS as advised by the RPA.

**3.7 The Radiation Protection Supervisor shall** supervise work with ionising radiation of his / her staff to the extent necessary to enable work to be carried out in accordance with the Ionising Radiations Regulations 1999, and take reasonable steps to ensure local rules relevant to that work are observed. RPS's shall formally investigate the circumstances if any staff they supervise receive a dose exceeding 2mSv in any year. A more informal investigation should be carried out for unexpected doses less than this level.

#### **4. Definitions**

4.1 RPS - Radiation Protection Supervisor

4.2 RPA - Radiation Protection Advisor

4.3 N - Negligible Risk

4.4 GA - Generally Acceptable Risk

4.5 T - Tolerable Risk

4.6 U - Unacceptable

#### **5. Procedure**

5.1 Line managers and staff shall use the attached tables as a means of controlling and reducing the risks from the work they carry out.

#### **6. Associated Documents**

6.1 **BSS/HRM/007** - Ionising Radiation - Exposure monitoring (to be reviewed)

6.2 **BSS/HRM/006** - Ionising Radiation - Classification (to be reviewed)

6.3 **G/BSS/HRM/003** - Guidance - IRR85 and OWR93 ( to be reviewed)

6.4 **G/BSS/HRM/005** - Guidance - Issue and renewal of Protective Equipment

6.5 **BSS/HRM/009** - Issue and Renewal of Personal Protective Equipment

6.6 **G/BSS/HRM/006** - Guidance: Identifying and Controlling Risks for NSD staff visiting Nuclear Sites

6.7 **BSS/HRM/008** - Health and Safety of New and Expectant Mothers

6.8 **G/BSS/HRM/004** - Guidance: New and Expectant Mothers

6.9 **BSS/HRM/019** - Local Rules under IRR99 for NSD staff visiting Nuclear Sites

6.10 Chemical (Hazard Information & Packaging for Supply) Regs 94

6.11 Electricity at Work Regs 89

6.12 Control of Asbestos at Work Regs 87

6.13 Personal Protective Equipment Regs 92

6.14 Ionising Radiations Regs. 1999

6.15 **Health and Safety Guidance for Managers in HSE Offices.**

6.16 Confined Spaces Regs 97

6.17 Provision and Use of Work Equipment Regs 92

6.18 Management of Health Safety and Welfare Regs. 1999

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## ANNEX 1

### **RADIOLOGICAL HAZARDS**

HAZARD	ACTIVITY	CONSEQUENCE	LIKELIHOOD	RISK	EXISTING CONTROL MEASURE	PROPOSED ADDITIONAL CONTROL MEASURES
Inhalation or ingestion of radioactive material.	Presence in controlled areas on operational nuclear reactor sites and processing plants laboratories, waste stores, ponds etc.  On or near a licensed site when a significant radiological event occurs (covered by the above but even more remote)	Minor  Serious  Death	Occasional  Remote  Improbable	GA  T  T	General knowledge of hazard and precautions needed.  Site safety systems and procedures.  HSE/NSD policy, procedures and guidance and site visit protocol.  NSD H&S arrangements.  Limited occupancy of risk areas.	Additional specialist training (including RPE)

Exposure to direct radiation	As above.	Minor	Occasional	GA	TLD from approved dosimetry service.	IRR's 1999
		Serious	Remote	T	BSS/HRM/007 Ionising Radiation - Exposure monitoring	
		Death	Improbable	T	RPS review of doses.  Advice from RPA on request  Annual review of doses by RPA	

### Definitions

N = Negligible

GA = Generally Acceptable Risk

T = Tolerable Risk

U = Unacceptable

### CONVENTIONAL ON SITE HAZARDS

HAZARD	ACTIVITY	CONSEQUENCE	LIKELIHOOD	RISK	EXISTING CONTROL MEASURE	PROPOSED ADDITIONAL CONTROL MEASURES
Slips, trips and falls on level.	Movement around installation or work-site	Minor	Probable	T	Provision of safety footwear (steel toe-caps, oil resistant soles)	
		Serious	Occasional	T		
					BSS/HRM/009 - Issue and renewal of PPE	
					G/BSS/HRM/005 - Guidance: Issue and Renewal of PPE	

					Health and safety Guidance for Managers in HSE offices.	
Falls from heights.  Struck by falling objects.	Inspection/use of scaffold.  Movement up/down stairs.  Unguarded floor openings  Movement around installations	Serious  Death  Major  Serious  Death	Occasional  Remote  Remote  Occasional  Remote	T  T  T  T  T	Scaffolding not to be used without checking of scaffold lags or advice from operator  Site safety rules on guarding.  Provision of safety footwear and hard hats.  Avoid proximity to suspended or moving loads.	Conventional Safety Training Course
Inadequately guarded machinery	Movement around installation.	Serious	Improbable	GA	Avoid proximity of unguarded machinery.	
Toxic chemicals other than in confined spaces.  Steam  Cryogenic material (from liquid CO <sub>2</sub> )	Inspection activities	Minor/Major  Serious  Serious	Remote  Improbable  Improbable	N  GA  GA	Guidance from site staff. Follow control measures in Site COSSH Assessment including PPG. Justify need for entry/proximity.	
Sensitisation from chemicals.	Inspection activities.	Serious	Improbable	GA	Wear where necessary the correct RPE.	
Debris from high pressure event	Being in the vicinity of high pressure process plant.	Serious	Remote	GA		
Electrocution	Inspection of switch gear, control and instrumentation equipment	Serious  Death	Remote  Improbable	T	Inspection carried out under safety documentation. Hands off approach.	

Welding arc/ fumes	Inspection activities	Major	Improbable	N	Stop the welding before approaching. Check LEV is operating.	
Noise	General presence in process/ generating areas.	Serious	Occasional	T	Hearing protection is provided by HSE see BSS/ HRM/009 - procedure for issue and renewal of PPE.	
Airborne Asbestos	Accidental encounter	Major	Remote	N	Seek specialist advice. Get out of area. Orinasal masks provided by HSE.	
Manual Handling	carrying equipment	Minor	Remote	GA	HSE policy on manual handling.  Health and Safety Guidance for Managers in HSE Offices.	
Dropped loads	Inspection activities	Serious	Improbable	GA	Do not stand under a suspended load.	
Parting wires	Inspection activities	Major	Remote	T	Avoid wires under tension.	
Moving vehicles	Inspection activities.  Involvement in Emergency Exercises	Serious  Death  Major	Occasional  Remote  Occasional	T  T  T	Observe the site segregation of people from vehicles.	
Collapse of incomplete structures and scaffold  See falls from height	Inspection activities/ access	Major  Death	Occasional  Remote	T  T	Provision of safety footwear and hard hats - see BSS/ HRM/009 - Issue and renewal of PPE	
Fire and explosion	Inspection activities.	Serious  Death	Remote  Improbable	GA  T	Observe fire precautions especially escape routes	

Free flowing solids/liquids other than confined spaces	Inspection activities.	Death	Improbable	T	Availability of life jackets, and handrails.	
Foreign objects in eyes	Inspection activities	Serious	Occasional	T	HSE provide safety glasses and goggles see BSS/HRM/009 - Issue and renewal of PPE	
Violence	Inspection activities	Serious	Improbable	T		
Exposure to Non-ionising Radiations	Inspection activities	Minor	Occasional	GA		
		Serious	Remote	GA		
		Death	Death	T		
Working alone/ Undiscovered accidents	Inspection activities  Inspection in remote area of site	Serious	Improbable	T	Site safety systems and procedures and statutory provisions  Operate following a safe system - Inspectors to inform site staff of their location and duration	
		Major	Remote	T		
		Death	Improbable	T		
Confined Spaces  Oxygen enrichment  Oxygen deficiency  Toxic gasses  Free flowing solids  High temperature  Flammable and Explosive		Death	Improbable	T	High standard of conventional safety at sites  Mature staff with industrial experience  Risk assessment by licensees of confined spaces  High standard of conventional safety at sites. Detection systems for CO <sup>2</sup> leakage as part of	Assess need for entry
		Serious	Remote	T		Conventional Safety Training
		Minor	Occasional	GA		Course
						Risk Assessment under Confined Spaces Regs 97
						Safe work in confined spaces (ACOP) L101

atmospheres					safety systems	O <sub>2</sub> meter (where required)
Drowning					Site safety systems and procedure	PPE Regs 92
Low temperature					Provision of cold weather clothing	
electrocution					Intrinsically safe lighting/ tools	
					BSS/HRM/009 - Issue and Renewal of PPE	
Asphyxiation	Inspection duties on CO <sub>2</sub> cooled reactors	Death	Improbable	T	Mature staff normally with industrial experience.	1. Conventional Safety Training Course
Thermal Stress	(note also quantities of nitrogen on most reactor sites)	Serious	Remote	GA	Risk assessment by licensees of confined spaces	2. Confined Spaces Regs 97
	Inspection activities in Hot environments	Serious	Improbable	T	High standards of conventional safety at sites.	3. Safe work in confined spaces (ACOP) L101
	Inspection activities in Cold environments				Detection systems for CO <sub>2</sub> leakage as part of safety systems.	4. O <sub>2</sub> meter
					Site safety systems and procedures.	5. PPE Regs 92
					Provision of cold weather clothing - see	
					BSS/HRM/009 - Issue and renewal of PPE	