

|                            |                       |                  |                     |
|----------------------------|-----------------------|------------------|---------------------|
| Dokumenttyp                | Dokumentstatus        | Statusdatum      | Dokument-ID/Version |
| Presentationsmaterial - VO | <b>Frisläppt</b>      | 2017-04-19       | 1701177 / 19.0      |
| Intern dokumentägare       | Sekretessklass        | Gäller t o m     | Alt. dokument-ID 1  |
| NS                         | <b>Öppen</b>          |                  |                     |
| PSG / FSG enl dok.nr       | Ersätter              |                  | Alt. dokument-ID 2  |
| /                          |                       |                  |                     |
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## Safety regulations at Ringhals

### SUMMARY

The document “Safety regulations at Ringhals” is a comprehensive summary and information of the general rules and routines that shall be followed by all workers at Ringhals.

Except for the directions in applicable Swedish laws, regulations and issued instructions, all personnel shall also follow applicable internal directives and instructions.

The operation manager and the work management for the contractors are responsible for taking necessary actions if subordinated personnel fail to follow the safety and protection rules at Ringhals.

Consulted companies are obliged to follow the rules established by the purchaser. If companies or their employees break any of the established directions, this is considered to be a violation of agreement.

Upon consulting contractors or other personnel, the responsible Ringhals requisitor shall assure that the contractors’ personnel possess appropriate training and skills and if needed ensure that complementary training is conducted.

**This is a translation of the Swedish edition 931209027/27.0**

### Delgivning och distribution

Delgivning för åtgärd: NBZ, NKK.

Delgivning för kännedom: Tillträdesansvariga, NB,ND, NH, NK, NQ, NR, NS, NT, NU, ND1, ND2, ND3, ND4, NDC, NDM, NSA, NSB, NSF,NRSM, NSS, NUB, NUE, NUI, NUG, NUM, NUP, NUQ, NUT, Skyddspärmsystemet (HEBA), Berörda FOH.

Distribution:

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## **APPENDIX**

1. General demands for admission to Ringhals
2. Training

## **CONNECTED APPENDIX**

3. Technical marking of chemical products

| <b>REGISTERED REVICES</b> |               |  |                             |
|---------------------------|---------------|--|-----------------------------|
| Version No                | Revised pages | Reason   | Administrator / Released by |
| 18.0                      |               | See version 18.0   | B Danielsson/<br>E Halldén  |
| 19.0                      | Several       | Minor editorial amendments.  | B Danielsson/<br>B Linde    |
|                           | Page 1        | The document type is changed from Instruction to Presentation material.  |                             |
|                           | Page 1        | <b>SUMMARY</b> Clarified that the document constitutes an overall information about the rules at Ringhals.                         |                             |
|                           | Page 6        | <b>Chapter 1.1</b> Supplemented the text about the long-term work environment responsibility for external personnel.               |                             |
|                           | Page 6        | <b>Chapter 1.2</b> Supplemented the text with the employers liability to verify that their staff comply with rules and procedures. |                             |
|                           | Page 7        | <b>Chapter 2.1</b> New text about defibrillators.  |                             |
|                           | Page 9        | <b>Chapter 3.1</b> New text about drug test for contactors.  |                             |
|                           | Page 12       | <b>Chapter 6.1</b> Supplemented text about electrical accidents.   |                             |
|                           | Page 12       | <b>Chapter 7</b> New chapter, Environment.   |                             |
|                           | Page 13       | <b>Chapter 8.1</b> New chapter, Health, safety and environment (HSE).  |                             |
|                           | Page 13       | <b>Chapter 8.2</b> Supplemented text about personal protection equipment in electrical rooms and outdoors.                         |                             |
|                           | Page 14       | <b>Chapter 8.6</b> A new access training, Work in room including operable equipment.   |                             |
|                           | Page 16       | <b>Chapter 8.14</b> Amended text about open shaft.   |                             |
|                           | Page 17       | <b>Chapter 9.2</b> Amended text about introduction of new chemical products.   |                             |
|                           | Page 20       | <b>Chapter 13.1</b> Supplemented requirements for fire technical permit.   |                             |
|                           | Appendix 1    | <b>Appendix 1</b> New text about drug test for contactors. Only a copy of the result from the drug test is necessary.              |                             |
|                           | Appendix 2    | <b>Appendix 2</b> Revised  |                             |

# 1 RESPONSIBILITY

## 1.1 Work environment responsibility

Requirements for the work environment work are included in the Work Environment Act (AML) and are completed by the Work environment ordinance (AMF). More detailed rules for the work environment are included in the instructions (AFS) issued by the Work environment authority.

Work environment work should be conducted in accordance with AFS 2001:1 Systematic Work Environment work. Ringhals is certified according to OHSAS 18001 concerning work environment.

The employer is according to AML main responsible for the work environment. Every employed has a personal responsibility for health and safety in the daily work. In purpose to create such a good environment as possible, each employee is obliged to know and follow Ringhals' rules and routines as well as the specific requirements that are included with certain assignments.

When external personnel are hired, AML separates:

1. **Contract work:** Work when an external company is hired to conduct clearly defined work assignments and where the contractor is responsible for work management, work equipment and material. The contractor has the protection responsibility for their own personnel.
2. **Contracted labour force:** Work when external personnel are hired to conduct a specific type of work. Ringhals is responsible for work management, work equipment and material. Ringhals has the protection responsibility for hired staff in the same way as for own personnel. However this does not include the long-term work environment responsibility, for instance work adaption, rehabilitation and skills development.

An agreement is to be set up between Ringhals and the hired contractor that clarifies the division of protection responsibility.

## 1.2 Co-ordination responsibility

Ringhals AB is responsible for the co-ordination at each work. This includes an obligation to co-ordinate the protection work around the common work environment risks as several employers are active at the same working site. The above doesn't exclude each employers work environment responsibility. Ringhals should inform about the rules and routines that are valid for everyone who works at Ringhals and should also follow up that they are followed. Each employer must verify that their staff comply with established rules and procedures.

## 1.3 **Building environment responsibility**

In accordance with AFS 1999:3, anyone who has a construction or establishment work conducted (proprietor/purchaser) should appoint a building environment co-ordinator (BAS P/U). There is also an obligation to report the work in advance to the work environment authority if any of the below requirements are fulfilled:

- The work is estimated to continue for more than 30 work days with more than 20 workers participating at the same time or
- If the total amount of person working days is estimated to exceed 500

The proprietor should make sure that a work environment plan is worked out for the building or establishment work that fulfils the requirements for a report in advance and/or when there are certain risks, for instance a risk for fall to lower levels. The work environment plan should include a planning of the identified risks for the project in order to minimize the risk for illness and accidents.

## 2 **ALARM, EVACUATION AND FIRST AID**

### 2.1 **Accidents and first aid equipment**

First-aid kits are to be found in the vicinity of every stairwell and in the Health and Safety offices.

There are several defibrillators at Ringhals. The location is marked on the site area map. Defibrillator is also included in the equipment for Ringhals internal rescue team.

In case of emergency there are persons trained in first aid at the maintenance-, operational- and health and safety departments.

The internal rescue team at Ringhals are available around the clock and are well educated in taking care of injured persons and should always be called to the scene of an accident.

During office hours the industrial health service is manned with nursing staff. The nursing staff is always called out to the scene of the accident.

### 2.2 **Alarm numbers**

From internal telephone (as well as Vattenfall internal mobile phones) call: 3333 (Ringhals security centre).

From external mobile phone, call 112. The alarm will be connected to the county alarm centre in Halmstad.

## 2.3 Alarm signals

### Immediate danger

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0,5 second pulsing sound in up to 60 seconds.

Triggered when evacuation is required. Proceed immediately to the nearest assembly point. Wait for further information via the speaker system.

### Important message

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Signal 7 seconds with 14 seconds pause.

Triggered as emergency alarm. Go indoors, proceed to assembly point and await further information via radio or the speaker system.

### Emergency over

---

Prolonged signal, about 30 seconds.

All personnel are required to inform themselves about the alarm signals that exist within the area. Signs showing current alarm types are posted at several locations in the plant, for instance on signboards, in personnel locks and in elevators.

## 2.4 Assembly points

At alarm signal “Immediate danger” and “Important message” the personnel gather at the assembly points. Ringhals assembly points are:

- 1P Entrance
- 2P Canteen
- 4P Canteen Forellen
- RG 25 Canteen Kantarellen
- RG22 Workshop building
- RG54 The gymnasium – Ringhallen
- RG82 Videbergsborg 2

## 2.5 Familiarity with the site

The work management or the purchaser’s responsible for access, is responsible to make sure that own and hired staff are familiar with the working site, the alarm system, evacuation routes and assembly points. Prior to access to the reactor containment, all staff should also be familiar with how the personnel locks work.



## 3 GENERAL RULES

### 3.1 Alcohol and drugs

Ringhals shall be kept free from drugs and in our drug preventive programme it is stipulated how this is to be achieved.

It is forbidden to be under the influence of alcoholic beverages or drugs whilst at work or to bring alcoholic beverages or drugs into Ringhals. An individual who does not respect these rules will be dismissed immediately from Ringhals. Drug tests can also be required if there is reasonable suspicion.

For assignment at Ringhals all personnel have to be drug tested for amphetamines, cannabis, opiates and cocaine prior to entrance from the first day at Ringhals. Drug test is not required for assignments in the industrial area less than five days. The test is valid for a period of three years.

All personnel who are entitled to access the IS/IT environment within Ringhals, must have passed the drug test corresponding to access to the plant, i.e. from the first day.

Drug tests for Ringhals' employees are carried out at the industrial health service upon hiring, randomly and on suspicion. If the drug test shows a positive result the employee will be taken care of according to the rules at Ringhals.

#### **Contractors/consultants**

The contractor or consultant must send a copy of the drug test, without remarks, to Access service at Ringhals well ahead prior to his/her arrival at Ringhals. The result from drug test have to be stamped by performing medical facility. The drug test for contractors is on the contracting company's expense.

As for contractor personnel, the power plant will conduct random tests in order to check that the tests have been conducted in a correct manner.

In addition, random alcohol and drug tests are also carried out at the power plants for all personnel.

- If an alcohol test is positive, the person must immediately leave Ringhals
- If a randomly conducted drug test of a contractor is positive, at least two years should pass before new access may be tried. The person is during that time suspended from Ringhals.

### 3.2 Smoking

There is a **smoking prohibition** indoors and outdoors at Ringhals. Smoking is only allowed on assigned locations.

### 3.3 House keeping

In order not to increase the risk for accidents and jeopardize the operation and reactor safety, the worker is responsible for keeping good order at the working site.

Electricity cables, hoses and similar should be located so that they are not damaged, don't cause accidents and prevent evacuation.

### **3.4 Cleanliness in system and plant**

There is a training requirement, please see appendix 2 – Clean system.

Objects and dirt in the systems have great importance on for instance the radiation dose to the personnel, component functions as well as fuel damages. In order to prevent spreading of impurities, they should be taken care of at the generation source.

Personnel working in the plant should be familiar with the existing cleanliness demands. There are separate cleanliness demands for components, depending on what system they are part of and if they are in contact with process water or not.

Clear plastic is not allowed in radiological controlled areas. Personal equipment like glasses, dosimeters, watches, etc are excepted from this general prohibition, except for within indicated cleanliness areas.

For use of chemicals, Ringhals technical marking should be followed [please refer to appendix 3 (connected)].

### **3.5 The use of radio transmitters and mobile phones**

The use of radio transmitters and mobile phones is prohibited inside operational buildings within the operations area, due to the risk of interference with electronic installations. There is no prohibition inside the personnel buildings within the operations area. With operations area we mean the areas of Unit 1-2 and Unit 3-4.

### **3.6 The conformity to rules and consequences**

All managers and management for the consulted contractors and consultants have a responsibility to supervise and correct anyone who doesn't follow the protection rules established at Ringhals. It is also a personnel responsibility to support one's colleagues in following the rules.

In situations when single persons don't fulfil these requirements, a number of different labour legislation actions may be taken. The choice of consequence depends on the degree of misconduct and what degree of damage it causes Ringhals. An evaluation should also be made if completing training is required, for instance Safety and security training. If the misconduct is very severe or if it is a repeated event, an evaluation is made if there are reasons for the contracted person to terminate the assignment prematurely.

As for **Ringhals' own staff** there are guidelines for handling in an instruction in Ringhals Management System.

## 4 EVALUATION OF RISKS

The authorities, ESA, Safe work at Ringhals and internal control documents demand an evaluation of risks prior to work commence. A fundamental rule is that all functions should be risk assessed but the requirements within different areas varies.

The person in charge of the function should make sure that risks are identified, evaluated, handled and documented. If something is changed in the function, when there are serious near accidents or accidents, the risk evaluation should be updated. Regardless of events, risk evaluations older than five years should be updated.

There are specified requirements on risk evaluations for instance upon usage of larger machines, heavy lifts and upon use of chemicals.

## 5 FAULT PREVENTING METHODS

There are training requirements, please see appendix 2 – Fault preventing methods.

For all functions with importance for personal and reactor safety, there are requirements on a fault preventing (pro-active) manner of work. Personnel working at Ringhals are responsible for working pro-actively with situations that may lead to accidents, disturbances and faults. As for the external environment, it is also important to prevent fault events that may lead to discharge or that may harm the environment. A support in this work is the fault preventive methods described in certain brochures, *Fault preventive methods*.

### 5.1 Pre job briefing

The process “pre job briefing” is implemented in order to decrease the risk of events that may affect reactor safety, personal safety and availability. The process means that a briefing is carried out with regards to how the work should be conducted along with the risks and threats that shall be avoided.

A “post-job debrief” is performed in order to benefit of the experiences after the performed work assignment.

## 6 REPORTING AND WORK EXPERIENCE FEEDBACK

### 6.1 Work related accidents and near accidents

Upon **accidents, near accidents** or discovery of serious faults, this should immediately be informed orally and soonest possible in writing, via the intranet [Insidan(Avärs/RiO)]. Near accidents include fault events that might have resulted in a damage of the plant, for instance a fire as well as a near accident affecting the external environment.

If a person is exposed to an electrical accident should hospital be contacted for a check. All electrical accidents are classified as serious accidents. The victim should not drive yourself to the hospital.

Electrical near accidents and accidents shall be communicated to Ringhals electrical safety engineer.

Accidents must be reported according to standard procedures on the website <https://anmalarbetskada.se/>

## 6.2 Risk observations

A **risk observation** is observation of a risk that may lead to accident or near accident. Reporting of the risk observation is made via the intranet [Insidan(Avärs/RiO)] or via a certain template that is available within the different departments, (for instance in the canteens). Reporting of risk observations is also valid for operational safety and reactor safety as well as fire and external environment.

## 6.3 Experience feedback leaflets

A part of continuous improving ourselves in our own function is to learn from own experiences. These are collected by the reporting made in Ringhals' system for deviations, experiences and issues (Avärs).

In addition to attending to the event as such, experiences are compiled and communicated among other ways via the experience feedback leaflets. These should be used at work planning, pre job briefing, etc.

Our learning depends on your participation and reporting.

# 7 ENVIRONMENT

Ringhals is certified according to the environmental management system ISO 14001 which focus on work with continuous improvement. A part of the work with continuous improvement means to work with so-called environmental goals and significant environmental aspects.

Ringhals environmental goals and significant environmental aspects are shown on [Ringhals external website](#).

## 8 WORK ENVIRONMENT AND GENERAL PROTECTION RULES

### 8.1 Health, safety and environment (HSE)

Contractors shall be able to present a HSE-plan for Ringhals, which has the right to demand an improved plan if necessary before starting work.

### 8.2 Personal protection equipment

Helmet, goggles and safety shoes are compulsory protection equipment as posted in the plant, stores, workshops, etc.

Full covering arc tested clothes from inside/out shall be used when working in electrical rooms (connections/electrical work).

Helmet, goggles, safety shoes and visibility clothes shall be used at **outdoor workplaces** (within protection barriers or at work close by) and personnel protection equipment according to the signs of the work area.

Special protective clothing is needed within controlled area. See 14.8.

Ear protection must be used in operational areas with high noise level.

Changes of protective equipment occur in accordance to safety permit, signs or pre job briefing.

Supervisor or the foreman is responsible for the employee's use of the protection equipment.

The employer/supplier is responsible for the normal personal protection equipment except in radiological controlled area where protective equipment is approved by Ringhals.

### 8.3 Medical examinations

The employer must provide medical examination according to The Swedish Board of Occupational Safety and Health provision, AFS 2005:6 Medical examinations in working life of employees exposed to hazardous air pollution.

### 8.4 Pregnant and breastfeeding women

Risk assessment must be made according to The Swedish Board of Occupational Safety and Health provision, AFS 2007:5 with regards to pregnant and breastfeeding women.

### 8.5 Solitary work

At solitary work there should be routines for communication and emergency evacuation at a possible accident. If safe communication cannot be arranged, the work may not be conducted as a solitary work.

A risk assessment should form the basis for analysing if the work may be conducted as a solitary work or not. Consideration should be taken to the

worker's physical and mental conditions. The safety trustee should be notified at arrangement of such solitary work that entails an obvious risk for body damage or solitary work that involves a severe mental strain.

## 8.6 **Work in operation areas or work on/close to operational components**

There is a training requirement, please see appendix 2 – Work in room including operable equipment.

The work in the plant should be conducted by a person assigned as work foreman/electrical work responsible. This person should have conducted a special training in the safety instructions.

The work may not be commenced until a work permit or a work authorization has been received from the operation supervisor/duty shift manager in each control room or Work Control Center.

Many work assignments also require a safety permit that is collected from the health physics office at the unit in question. The permits are required for the plant and personal safety and should be scrupulously followed. The permits should be assigned by the responsible work foreman/work responsible/electrical work responsible.

Here below is a list of permits:

- **Work permit:** If the work requires that components be taken out of operation.
- **Work authorization:** For situations where components do not need to be taken out of service or disconnected.
- **Safety permits:** Must always be obtained prior to work in radiological, fire technical or environment technical environments, (please see 8.7, 13.1 and 14.7).

## 8.7 **Environment technical safety permit**

The work management should at the planning of a work assignment consider if the work assignment's nature requires safety permit.

Examples of when an environment technical safety permit should be issued:

- Access to confined premises (vessels, tanks, draining-wells)
- Work in cooling water channels
- Use of hazardous chemical products, please see chapter 9
- Work in strong electromagnetic fields
- Work in systems including chemicals

## 8.8 **Work in confined premises**

Work in vessels, tunnels and other confined premises may constitute a risk for suffocation, poisoning and fire and may also entail problems upon evacuation and taking care of injured. Prior to access to confined premises, an environmental technical safety permit should be issued.

## **8.9 Narrow conductive areas**

When work is conducted in narrow areas with electrical conductive surroundings (tanks of metal, condensers, etc) there are special requirements for the voltage feed for use of removable and hand held electrical equipment, for instance at most 50 volts AC to a hand lamp.

## **8.10 Registration report electrical contractor**

Electrical contractors that are to be engaged to carry out or supervise electrical installation work of any kind on Ringhals' electricity plant, must forward information concerning the electrical installation company (name, address, phone number to) to a certificated electrical engineer at Ringhals along with information about the authorized installation engineer for the actual electrical installation assignment (name, address, phone number and copy of the authorization proof) along with a copy of the third party insurance.

## **8.11 Work in heat**

Working in hot environments may constitute a risk for near accidents and accidents. The responsible work management is therefore responsible to evaluate this risk. The work shift's length should be adapted to the prevailing conditions. Upon work in a warm environment, special consideration should be taken to this upon planning of the work. Further information may be obtained from the Health and Safety office.

## **8.12 Lifting**

There is a training requirement, please see appendix 2 – Lifting.

For lifting works, only approved and marked equipment may be used. Possible faults on the lifting equipment should immediately be reported to the supervisors.

Temporary lifting equipment, for instance lifting racks, shall be controlled and marked. Ringhals has internal instructions regulating this. The equipment shall in general be checked every year.

Personnel conducting lifts should have a valid authorisation to perform lifting at Ringhals. Ringhals internal instructions within this area should be followed. Information is given by the work management or the Ringhals admission responsible. The work management shall ensure that persons who work with lifting and lifting equipment have the right competence/ authorization.

### **Contractors**

If contractors wish to use the purchasers lifting equipment, this should be carried out in accordance with Ringhals' lifting instruction.

If the contractor wishes to use their own lifting equipment, this should be reported to the responsible for lifting at Ringhals who will give further instructions. Lifting of persons with crane or overhead travelling crane, etc. is not allowed unless a special permission is granted by the responsible for lifting at Ringhals.

### **8.13 Use of industrial truck**

The driver should prior to truck handling commence, have carried out related training.

Prior to truck work, the responsible Ringhals manager should issue a written drivers licence for industrial truck.

### **8.14 Danger of fall and falling objects**

When there is a risk of falling objects, when you open to underlying levels and when working in and close by open shaft, shall the area be obstructed and warning signs shall be posted. The area underneath the opening shall be roped off and warning signs shall be posted before work starts.

At work on high altitudes, higher than two meters, fall protection equipment shall be used if not the risk for falling accident is estimated as low. The health and safety offices may supply fall protection equipment for temporary use.

Everyone who use fall protection equipment shall receive management information from authorized personnel.

### **8.15 Routine for barriers**

In combination with the barrier, signs shall provide information of hazards, and who is responsible for the barrier .

## **9 CHEMICAL PRODUCTS**

All chemical products used and stored at the Ringhals site have to be registered, following environmental and health aspect review and approval. Chemical products include for example oil, tape, gaskets, coloured pencils and detergent. Every chemical product is to be classified according to the nuclear industry joint marking system of technical marking [appendix 3, (connected)]. Unlabelled chemical products may not be used at Ringhals.

Use of hazardous chemical products such as corrosive fluids or commence of work where toxic or explosive gases might occur must be regulated in a safety work permits. Chemical and environmental safety permits are received at the Health and Safety offices. Upon work in systems including chemicals, the work management shall consider if an environment technical safety permit is necessary.

### **9.1 Chemical register with Material safety data sheets**

Ringhals approved chemicals are included in a chemical register that also covers protection information for each product. All computer users within Ringhals, has access to the register. As for contractors, each access responsible person makes sure that access to the register is granted.



## 9.2 Introduction of new chemical products.

Administrators at NSM make an evaluation of each new chemical product according to the established requirement template prior to possible procurement. Prior to application of procurement, it should always be investigated if the actual product or another product with the same function is already registered in the chemical register.

In order to evaluate a new chemical product, you need to apply for a new product via the chemical register. Together with the application shall the safety data sheet of the product be appended and furthermore shall a sample of the product (ca 100 ml) be delivered. A complete application and possibly further information should be handed over to NSM no later than five weeks prior to planned use.

## 9.3 Storage of chemical products

All chemical products should be stored embanked. Inflammable chemical products should be stored in special lockers. Safety data sheet should be kept at permanent storage places. The user is responsible that unused chemicals is disposed according to applicable directions.

## 9.4 Risk assessment of chemical products

Work assignments where chemical sources of risk may cause illness or accidents in the function, should be analysed and evaluated for all products and as often as the function requires. The risk assessments are mainly conducted in the chemical register iChemistry.

# 10 WORK EQUIPMENT

## 10.1 Electrical material

The employer is the “possessor” of the electricity material used within the own unit and is responsible for keeping it in such a status and that it is used in such a way, that it provides necessary safety for persons and possessions. Please also see the valid instruction in this area.

Certain electrical material such as jointing cables, movable centrals, lighting and utility goods, electrical cleaning equipment, electrical vehicles etc, should be checked yearly and marked with the latest control date according to valid instructions.

All **contractors** who are to perform work within Ringhals premises or plant parts and who need to connect electrical material to Ringhals power current plant, are obliged to show that the electrical material in electrical aspect, fulfils the valid regulations and provisions.

Ringhals has out of an electrical plant point of view, responsibility for the electrical material that is connected to our power current plant.

### *Control interval*

A control conducted within a year prior to the use at Ringhals is considered to be valid.

### *Continuous control*

All electrical material should be checked continuously so that it out of an electrical point of view, hasn't been damaged. If damage is discovered, the fault should be reported immediately.

### *Harsh environment*

If the electrical material after conducted control, has been exposed to a harsh environment (for instance heat, moisture, chill, mechanical affect) it should be controlled again regardless if the electrical material is within the control interval.

### *Marking*

The marking of controlled electrical material should be conducted in a sustainable way and should state "control date" or "control valid until" and the person who performed the control. The control date may not be older than 1 year.

If required by Ringhals, the **contractor** should be able to show a control proof. The proof may be a certificate or a record from the electrical installer responsible for the contractor's electrical material. The electrical installer should be registered at the Electricity Safety Authority.

If a control proof is missing, the electrical material must be tested prior to use according to the methods prescribed by Ringhals.

The above is valid even if the control is conducted by a foreign electrical installer with corresponding requirement on registration with relevant authority. A control proof should always be available upon request.

## **10.2 Hoses and junctions**

Approved compressed air hoses, junctions and hose clamps should be used.

## **10.3 Ladders**

All mobile ladders should be type approved, yearly checked and marked with the latest control date as well as equipped with anti-slipping devices.

Ladders should be placed in such a way that their stability during use is secured. A ladder that cannot be erected in a safe manner, should be braced or anchored.

Scaffolding ladders (without anti-slipping device) should always be firmly anchored and may not be used in any other way.

## **10.4 Scaffoldings, rails and beams**

Scaffoldings may only be assembled/altered/dismantled by trained scaffolders. Prior to work on the scaffolding, it should be examined and approved.

Beams, scaffoldings and similar may not be loaded more than what is stated on the working site. If such information is missing, it may be obtained from the work management or the purchaser's access responsible.

Prior to removal of permanent rails, grill flooring, hatches etc, and a protection screening should be assembled. The permanent equipment should be replaced as soon as possible.

## 11 WASTE AND RECYCLING

A major objective for Ringhals is to be a nuclear power plant with strong responsibility for environmental protection. This means that we continuously make great efforts to recycle material and reduce consumption of products that cannot be recycled. As a part of this ambition Ringhals has developed a smoothly functioning system of sorting waste at the source. All personnel including contractors must use the sorting system.

All waste from the radiological controlled area is considered to be radioactive waste. Production of radioactive waste should be minimized. In order to reduce the waste volume, it is important to separate waste that may be clean from radioactivity.

Waste and residual products transported out from Ringhals area must be reported to the waste department. This also includes waste/residual products from own material and work.

Residual products that are not recovered by the contractor must be taken care of according to the current rules at Ringhals regarding disposal of environmentally harmful waste and assortment of waste according to source. The extent of this is to be reported to the purchaser.

### 11.1 Hazardous waste

All hazardous waste must be left at the waste disposal plant. The waste must be marked with a special sticker (Declaration of hazardous waste) with information about the contents and the name of the deliverer.

## 12 HAZARDOUS GOODS INCL. RADIOACTIVE MATERIAL

Hazardous goods is a collective concept for substances and objects with such hazardous properties that they may cause damage to people, property or the environment, if they not are handled properly during transport. The purpose with applicable laws is to prevent and limit transports with hazardous goods to cause damage.

### 12.1 Arrival

All hazardous goods transports including radioactive material, arriving at Ringhals shall follow applicable rules. When vehicles loaded with hazardous goods arrive, the driver shall hand over following information to the guard:

- UN-Number
- Hazardous goods class
- Name of the receiver

Goods in class 1 (explosive substances and objects) may not be entered within Ringhals premises without a special permit.

Vehicles and package showing shortages that may affect the safety during load or unload will not have access to Ringhals area.

## 12.2 Transport within Ringhals industrial area

External arriving transports shall follow the guard instructions concerning transport route. Labelling and marking of vehicles and packages shall not be removed before the vehicle has been unloaded.

Drivers without “cicerone” shall stay close to the vehicle during loading/unloading.

## 12.3 Shipping

Ringhals Health and Safety office (NSS5) administrates all shipping of hazardous goods used at Ringhals.

### Exception:

- Radioactive sources owned and used only by the contractor company. Approval for shipping of radioactive source shall first be collected from the Health and Safety office (NSS5).

## 13 FIRE PROTECTION

There is a training requirement, please see appendix 2 – Hot work and Fire protection Ringhals.

In case of fire you must alert the rescue organization at Ringhals by dialling the alarm centre at the emergency number **3333** or from external mobile phone emergency number **112**. The personnel on the spot must warn others in the close vicinity and then try to extinguish the fire by using the firefighting equipment at hand.

### 13.1 Fire technical protection permit

A fire technical protection permit shall be collected from the concerned Health and Safety office and is necessary in the following cases:

- a) During hot and explosive works
- b) At disconnection of fire detectors
- c) At making holes in a fire cell limit
- d) Storage of compressed gas cylinders
- e) Work in explosive classified areas
- f) At other temporary deviations from the ordinary fire protection level when this is not regulated with an instruction (“technical exchange”)

### 13.2 Explosive classified areas

Hot work within explosive classified areas requires a non-gas declaration and issue of a hot work permit.

Only approved explosive classified equipment may be introduced within explosive classified areas. This restriction is valid for scrubbing machines, electrical tools, hand instruments, etc.

### 13.3 **Inflammable liquids**

Inflammable liquids (maximum 25 litres per fire cell) must always be kept in explosion safe containers. Max 5 litres may be taken to the work place. The containers must be clearly marked with a declaration of content. When not in use the containers must be kept in special lockers

### 13.4 **Gas cylinders**

All gas cylinders must be marked with a special label showing the owner. Storage of the cylinders must be carried out in consultation with the relevant Health and Safety office.

When be used for hot works gas cylinders containing oxygen and acetylene must have a flash back arrestor and the blowpipe handle should be equipped with a non-return valve.

A fire technical protection permit is required for storage of compressed gas cylinders for both oxygen and acetylene.

### 13.5 **Fire doors**

The fire doors are an important part of the fire sectioning in order to prevent spreading of fire. The fire doors should not be kept open or obstructed in their function.

If a fire door must be kept open or in other ways be obstructed in its function, a technical exchange must be carried out. Please contact the operations management or the Health and Safety office.

### 13.6 **Emergency exits and markings for emergency evacuation**

Emergency exits may not be blocked so they prevent evacuation. **The markings (luminous floor markings) for emergency evacuation must not be covered or blocked.** If the luminous floor markings must be covered or blocked, the Health and Safety office must be contacted in order to make a temporary drawing of the line.

An escape route shall have at least 0,9 m (door opening 0,8 m) free width. In some areas where only a few people are staying temporarily, 0,7 m free width is accepted.

Electrical cords, hoses or similar that must cross the escape routes, should be suspended on a safe height or be rerouted in such a way that they are not damaged or cause accidents.

### 13.7 **Fire-load density**

Avoid introduction of unnecessary packing material, wooden pallets, etc.

Unnecessary fire-load density such as wood, paper, plastic, clothes, flammable substances, etc, should be transported out from the plant soonest possible. If the fire-load density is increased a technical exchange should be considered in consultation between the plant management and the Health and Safety office.

The fire-load density should be kept as low as possible and is forbidden in escape routes.

## 14 PREVENTIVE RADIATION PROTECTION MEASURES

When at work in a radiological controlled area, special radiation protection rules and the Health and Safety office's instructions should be followed.

There is a training requirement, please see appendix 2 – Protection and safety, Radiation protection in practice and Radiation protection technique.

### 14.1 Rules for radiological medical examination/periodic control

All personnel should prior to work in an area with ionizing radiation, have conducted a medical examination / periodic control with approved result according to the current constitution from the Swedish Radiation Safety Authority (SSMFS 2008:51, 6 chap). Contractor personnel should prior to arrival to Ringhals, have conducted a medical examination/ periodic control and should present the doctor's certificate from this examination upon arrival. Ringhals internal personnel conduct the medical examination / periodic control at Ringhals company health service. Contractors are obliged to answer for this examination on their own and are encouraged to contact a medical centre within their own nursing area to have the examination conducted.

The medical examination should be conducted every third year. A periodic control based upon the health declaration should be conducted intermediate years. The doctor's certificate after the medical examination or periodic control is valid for 12 months at most.

If there are any reservations mentioned in the doctor's certificate, this should always be presented upon reception of a dosimeter at Ringhals along with a written explanation from employer and employee.

Ringhals manager for the radiation protection function may allow for exceptions for well limited short work where only low radiation doses are expected and where there is none or a very small risk for contamination (worker in category B according to SSMFS 2008:51, 4 chap). Ringhals has a restricted view on the granting of such exceptions.

#### **Medical examination/periodic control conducted in Sweden**

It is sufficient if the certificate is presented at any of the Swedish nuclear technical plants as the register of an approved examination/periodic control is made in a dose register, common for the plants. If such a register hasn't been made as yet, a valid doctor's certificate should be presented at the reception of a dosimeter at Ringhals.

As for the **doctor's certificate** and the **health declaration** templates concerning constitution SSMFS 2008:51, appendix 6 and 5, should be used. *The templates may be collected from the Swedish Radiation Safety Authority's webpage [www.stralsakerhetsmyndigheten.se](http://www.stralsakerhetsmyndigheten.se) or may be ordered from Kommentus Gruppen AB Liljeholmstorget 7, 117 99 Stockholm, phone +46 8-709 59 00.*

#### **Medical examination conducted in other country than Sweden**

Rules valid for medical examinations in the workers native country are accepted if the result may be attested. The doctor's certificate for the medical examination should be written in English and should be dated and signed by the doctor.

## 14.2 Dose passport and dose report

Citizens from the European Union from other countries than Sweden, should present a valid dose passport according to a special European Union directive. The dose passport should also indicate that the person is a worker in category A according to the Swedish Radiation Safety Authority's instruction 2008:51, 4 chap.

Citizens from other countries outside Sweden should prior to access to controlled area, present certificates about conducted medical examination and state the received radiation doses on the template **Dose report** (please see Ringhals external webpage). The certificated should be signed by a person responsible for company where the person is employed and should be presented in connection with the reception of access documents.

The template **Dose report** should also be filled out for Swedish staff occupied in work with ionizing radiation where the radiation doses are not registered in the nuclear common dose register.

If the person hasn't worked with radiology since the last evaluation/registration, the employee should state this. The employee should then sign the dose report himself/herself providing that the presented document contains complete information.

### 14.3 Dose limits

The following dose limits which are the most important of the dose limits defined by the Swedish Radiation Safety Authority are applicable:

#### **External radiation exposure of the entire body**

| Category   | Dose limit   |
|--|--|
| Men and women from 18 years of age during one year.      | 50 mSv per calendar year.  |
| Men and women from 18 years of age for any 5 year period | 100 mSv per 5 years (present year and the preceding 4 years).  |
| Men and women between 16 and 17 years of age             | 6 mSv per calendar year.   |
| Pregnant women <sup>1)</sup> .                           | Exposure to the foetus must not exceed a total of 1 mSv after confirmed pregnancy<br>Female workers shall inform the employer about the confirmed pregnancy as soon as possible. |

1) Pregnant women who have informed the employer have the right to be relocated to a work not connected with ionizing radiation or other hazardous work with a possible harmful affect may occur for the rest of the pregnancy. This also includes breastfeeding. Please see SSMFS 2008:51 and AFS 2007:5.

**Observe:** In order to minimize the risk of exceeding the above limits, laid down by the authorities, a margin in relation to the limits is applied at the Ringhals group.

Comprehensive control and planning of work assignments should be conducted so that every **individual's total dose load well falls under 15 mSv per year**, as an average over several years. *It is every manager's or work management's responsibility to limit each individual's total dose.*

### 14.4 Ringhals internal dose restriction for individual dose

To limit individual dose, *taken at Ringhals* and create a good base for improvements, the manager for the concerned Health and Safety department, concerned supervisor and concerned individual should evaluate the reason to that individual dose expecting exceeding 10 mSv current calendar year. If the person is allowed to exceed the internal dose restriction (control point) 10 mSv, shall the decision from the evaluation be approved by the manager of the concerned person alt. responsible hiring manager if the concerned person is supervised by an external company and by the manager for Operational Safety.

The limit for whole body dose in the admission system is 8 mSv current year. This means that individuals with a total whole body dose larger than 8 mSv are denied access to radiological controlled areas before the evaluating meeting or the limit in the admission system is increased.

### 14.5 Ringhals internal dose restriction for women

To limit the dose to women in fertile age, shall an evaluation to the reason why the woman's total dose exceeding/is expected to exceed **5 mSv** (including committed effective dose) during a period of **two months** be done. The manager of the concerned Health and Safety department is



responsible for having consultation with the safety unit, concerned supervision and concerned woman.

The limit for whole body dose in the admission system is 3 mSv/2 month. This means that women with a total whole body dose lager than 3 mSv are denied access to radiological controlled areas before the evaluating meeting has been conducted.

#### **14.6 Dose reducing measures in work planning**

When planning radiological work the principal rule is that all unnecessary radiation exposure must be avoided and that the radiation doses be kept “ As Low As Reasonable Achievable” (ALARA).

It is the work management’s responsibility to take actions in order to achieve this object during the planning and carrying out of the work. This should be carried out in consultation with the radiation protection staff. The personnel involved must receive the necessary information.

##### Contractors

In connection with the work planning, consultations must be held with the supervisors or Ringhals access responsible and the Health and Safety staff concerning the appropriate protective measure in order to reduce radiation exposure for the personnel.

Contractors that due to legislation in a foreign country or for other reasons apply more restrictive dose limits or lower planning/control limits than stated above are allowed to use such rules when carrying out work at Ringhals. However, it rests upon the contractor management to control the observance of these rules. Ringhals Health and Safety staff will assist in this matter and give information from the dose register but they will assume no other responsibilities. It rests upon the contractor, who for some reason applies more restrictive dose limits to specify in the offer the applicable maximum doses and give information about how the divergences from the Ringhals regulations will affect the number of persons involved in the work in question.

#### **14.7 Radiological work permit**

Prior to every radiological work (specified on the work permit) a special radiological work permit must be received at the relevant Health and Safety office. The work permit states among other things, extra protection actions.

A radiological permit is required in the following cases:

- a) If the work is to be carried out in areas with yellow or red radiological classification.
- b) If the work includes the opening of a system that might contain radioactive contamination.
- c) If it’s specifically required from the Health and Safety staff.

## 14.8 Personal protection equipment and dosimeters

Upon access to and during stay within the radiological controlled area, a personal TL-dosimeter and an electronic direct indicating dosimeter should be used. The dosimeters are provided by Ringhals.

### ***Protective clothing***

Within Ringhals' radiological controlled areas the following protective equipment must be used at least:

Protective clothing in terms of overalls, blue safety helmet, safety goggles and protection shoes for controlled area. Private clothes with the exception of underwear and socks may not be used in radiological controlled areas. Private underwear may not be visible outside the protection clothes.

Washable shoes for all personnel and visitors are provided at every step over. Approved safety shoes of another kind shall be distinguished from shoes used at unclassified area by blue markings on the toecap. Shoes used within the controlled area may not be used in other areas.

### ***Personal dosimeter of TL type***

Personal dosimeter of TL type should be carried clearly visible in the intended strap in the overall closest to the body. The dosimeter should be brought from the controlled area at every exit and after the working day it must be placed in a rack carrying the same number as the dosimeter.

The TL dosimeter should be returned when the work at Ringhals is finalized. An evaluation of the dosimeters is carried out the month after. The result from the evaluation may be acquired via the Intranet or from each contractor company. The contractor companies receive each month, an extract from the Swedish nuclear power plants' mutual dose register from the last month.

If Ringhals employees shall work temporarily at another nuclear technical plant, this should be informed to the Dosimetry department well ahead in time. In connection with this, the dosimeter should possibly be evaluated prior to the person travelling to the foreign plant. The Dosimetry department may also, whenever required, assist contractors in the same situation.

In case the contractor, due to legislation in a foreign country or by any other reason requires a permission to carry his own dosimeters at Ringhals, they must be carried together with the dosimeters that are handed out at Ringhals. The contractor together with Ringhals AB guarantees that this does not lead to a double report of the dose received.

### ***Electronic dosimeter***

The electronic dosimeter should be carried visible in the intended strap at the front of the overall. The dose code should be stated when the electronic dosimeter is collected. After visiting a radiological controlled area this dosimeter must be read out and placed in a charging rack.

## 14.9 Radiography

The Health and Safety office must be contacted before work with X-ray tube or isotope. It is the control company's responsibility e.g. to erect appropriate barriers and warning signs and to call on the Health and Safety staff for control prior to work commence.

When radiography equipment is not in use, it must be kept locked up and in safe storage protected from fire- and personnel risk. The relevant Health and Safety office may assign a storage room.

Radiography should always be preceded by Pre job briefing.

## 14.10 Barriers and signs

Barriers with ropes or chains are used in different situations with intention to mark or warn for a local change in the radiation environment. A barrier shall be considered as a wall or a closed door and may only be passed after performed prescribed protective actions.

In combination with the barrier, signs shall be erected with information about radiation level, contamination level, prescribed protection equipment and other actions. In some cases the radiation protection personnel shall be contacted prior to access.

## 14.11 Prohibition of eating etc in radiological controlled areas

In order to reduce the risk of radioactive substances entering the body it is **absolutely prohibited to smoke, use snuff, eat, and drink or to put on make-up** and bring these substances inside radiological controlled areas. Exceptions are fitted drinking fountains and special cafeterias inside radiological controlled areas where beverage and water is served.

## 14.12 Open wounds

Persons with unprotected open wounds are prohibited to work inside radiological controlled areas. If smaller wounds occur in radiological controlled areas, the wound should be checked on radioactivity before plaster is applied on the wound. Heavier bleedings may however be stopped by emergency bandage.

## 14.13 Contamination checks

The bringing of equipment, material, tools etc into radiological controlled areas must be reduced to a minimum. Wrappings must not be brought into radiological controlled areas without special permission.

All personnel leaving a radiological controlled area must carry out a personal scanning in a pre-monitor in order to detect possible radioactive contamination. After washing, contamination check and undressing the protective clothes at the step over, everybody must carry out one final scanning in an additional portal monitor. If the monitor alarms, given instructions shall be followed.

Equipment and tools may not be taken out from radiological controlled areas unless it has been carefully scanned and approved. Personal equipment and

tools may be surveyed in a scanner box by anyone. Other equipment, including process details, equipment with a risk for contained radioactivity, and equipment too large for the scanner box have to be scanned manually by the Health and Safety staff. Waste is always handled by Ringhals waste department. Approval for release and free use are according to the values in Swedish legislation, SSMFS 2011:2.

In some countries there is a more restrictive legislation concerning radiological classification. If Ringhals is required to carry out a radiological classification measurement according to limit values existing in foreign countries this must be clarified in connection with the procurement.

#### **14.14 Medical treatment with radioactivity**

Persons examined or treated with radioactive substances may still have such a large amount of radioactivity in the body to activate the alarm in the portal monitors.

Persons who have passed through such an examination/treatment shall take contact with Radio physics/whole-body at the Radiological Controller measuring prior to access to Ringhals.

As long as there is still sufficient radioactivity to activate the monitors, the person has no access to radiological controlled areas.

Access to not radiological controlled area may be granted after information to the Security Centre. Alarm from passage and exit out of the industrial area is thereafter handled by the Security Centre based upon the information from Radio Physics or the Health and Safety staff.

### **15 SECURITY AND ACCESS**

The purpose of our security measures and control is to prevent unauthorized trespass, sabotage and prevent unauthorized persons from gaining access to the nuclear plant and to monitor that the flow of persons and material is in a controlled manner. The purpose is also to prevent unauthorized concern with fissile material and nuclear waste.

With support from the Protection Law (2010:305), Ringhals Nuclear power plant is classified as a restricted area. This means that access is prohibited and photo and imaging is banned without a special permission.

#### **15.1 Access**

There is a training requirement, please see appendix 2 – Access training

All access requires authorisation and is given after consideration according to local regulations to the unit or part of the plant where the work is to be carried out. The admission permit is time limited and is valid during the work period.

Access requirement should be reported at least three days prior to arrival and during outage period, seven days prior to arrival.

### **Security background check including register check**

All internal Ringhals staff should conduct an approved security check prior to employment.

All contractors and consultants who should have access to Ringhals (including the industrial area) or Ringhals IS/IT system or safety classified information should conduct a security background check. Occasional visitors are exempted.

The security background check must be based on the knowledge of the person it concerns.

The security background test should indicate:

1. that the person is not under prosecution or has a criminal record
2. that the person does not have a drug addiction or a serious financial problem
3. that qualifications and certificates verify reliability during the last three years something that may be confirmed by references

The security check is completed with a register control showing that the information resulting from the security check isn't a burden.

Request for police register control to the relevant authority is done by Ringhals.

Security background check and police register control sent in and approved at another Swedish nuclear power plant is not valid at Ringhals. A new statement must be sent in to Ringhals. External personnel, who have not worked at Ringhals during the last 12 months, shall repeat the security background check and police register control.

It rests upon the contractor to guarantee that only known and reliable persons are engaged to work within Ringhals. Ringhals requires a security background check from all contractor personnel. The contractor must fill in the form "**Collective certificate of security background check**" (see Ringhals external website) and send it to Ringhals. The certificate proves that a security background check is done.

**"Statement for register check"** (please see Ringhals external webpage) should be approved by applicants. A filled out form for "**Generation of register check**" (please see Ringhals external webpage) should be attached.

The documents "Collective certificate of security background check", "Statement for register check" and "Generation of register check" should all have arrived to Ringhals at least four weeks prior to planned access date. The administration time is significantly longer **for foreign staff**. Depending on the country, the administration time may last for several months. The forms should be addressed to Tillträdesservice RSA.

Please observe that the above are minimum times required to grant access.

A person who has been evaluated as unsuitable out of a safety point of view is not granted access to Ringhals.

The contractor must contact Ringhals access responsible in all matters concerning admittance of persons and vehicles and when entering and removing goods and equipment.

#### Foreign personnel

A "Security clearance" certificate must also be attached. "Security clearance" must be approved by the security manager at Ringhals before access if the police register control is not completed. "Security clearance" from another nuclear power plant can also be approved or a certificate from the police registers in the home country, issued by the competent authority. The certificate shall be written in Swedish or in English. Translations from a foreign language shall be attested.

#### ***Access for visitors, children and youth***

For visitors there are special rules depending on whether it's a service visit or a visit for study. All cases requires a notification of the arrival.

Persons below the age of 12 are normally not allowed access into Ringhals area.

#### ***Return of documents***

All access documents must be returned when the assignment is finished. Costs for missing access documents will be charged to the employee's company.

## **15.2**

### **Vehicles**

Admittance for private vehicles to the industrial area is not normally allowed. Exceptions for medical reasons and the like can be given and then allowed after review. Parking is subject to the designated locations. For contractors or consultants, only service vehicles might be authorized.

In order to gain entrance the vehicle and its load must be shown to a security guard who grants permission for the vehicle to enter the area or stipulates that a security guard must accompany the vehicle when delivering or collecting goods.

Entrance and exit control of vehicles may be carried out.

Admission to introduce vehicles further in on restricted area (operation area) is granted very restrictively.

### **15.3 Safety control**

All personnel, all goods and all vehicles shall pass a safety control prior to access and granted entrance to restricted areas (operation area). Forbidden items are for instance weapons, knives, explosives and camera, including mobile phone with camera and may not be introduced without a specific approval.

The standard procedure for the safety control is among other things X-ray scanning of baggage and goods, metal and explosives detection and sniffer dog.

It's the shipper's responsibility that goods, subject to inspection, must have a bill of carriage or pick list that clearly describes the content with the shipper's name and phone number, and who is responsible recipient in restricted area, and his phone number

### **15.4 Surveillance**

By a combination of technical means such as locks, alarms, cameras, access and safety control and by personnel surveillance carried out by security guards, it is guaranteed that unauthorized persons are unable to gain access to the area unnoticed and that forbidden items are not brought into the area.

All personnel are obliged to follow instructions posted on signs and orders from the security guards. A security guard has the right to carry out a control of authority, send away, remove or temporarily take into custody. If necessary the security guard is also allowed to perform personnel searches and to inspect hand luggage etc.

### **15.5 Interior surveillance**

Everyone who is granted access are expected to participate in the safety work and report observations of importance for safety to manager, access responsible or in emergency situations to the security guard, alarm number 3333.

Your admittance card must be visible at all times.

Authorization is required for all photographing and filming at Ringhals for hired staff or visitors.

NOTE! All personnel are prohibited to take photos with a mobile camera inside the industrial fence.

### **15.6 Measures in order to prevent theft**

Everyone has a personal responsibility for his/her belongings and should keep it in a safe way.

All goods and materials that are to be taken out of the plant must carry a permit signed by the superior or an import list verified by a security guard. Security personnel carry out the control.

## 16 INFORMATION SECURITY

Ringhals information is divided into four security classifications according to a damage evaluation based upon the following criteria:

- **Open information:**  
Information obviously intended for external use or publication.
- **Internal company information:**  
Minor damage for the company, customers, cooperating companies, persons or business associates.
- **Secret information:**  
Serious damage to the company, customers, cooperating companies, persons or business associates.
- **Qualified secret information:**  
Very serious damage to the company, customers, cooperating companies, persons or business associates. Information that might in the short or long term jeopardizes the company's survival.

In connection to assignments, everyone is obliged to remain informed about the current regulations concerning company secrecy.

**Company internal information** shall not unnecessarily be spread outside the company and may not be handed out to unauthorized personnel.

**Secret or qualified secret information** must only be handled by personnel who are authorized in this respect and must not be revealed to anyone or be removed from the place of work without written permission from Ringhals. An authorized person is someone who needs the information in order to be able to carry out his/her work and has been considered suitable and reliable from a secrecy point of view and also has received the necessary information concerning the handling of secrecy matters.

All personnel who are about to receive **classified information** must be aware of the following:

1. The law concerning the protection of company secrets and safety protection legislation.
2. Ringhals regulations in the matter.
3. The information Ringhals wishes to keep secret.
4. Contact persons in different matters of secrecy.

Ringhals has the right to pledge contractor personnel with a written obligation to observe professional secrecy in connection to the assignment.



## 16.1 Compilation of Ringhals security classification

|   | Open           | Internal company  | Secret  | Qualified secret  |
|---|----------------|---|---|---|
| Internal e-mail and sync mobile   | No restriction | No restriction  | Only with approved encryption   | Not allowed   |
| External e-mail and sync mobile   | No restriction | No restriction  | Only with approved encryption   | Not allowed   |
| Internal mail   | No restriction | No restriction  | First, handover personally otherwise sealed envelope marked "Personally" and name             | Handover personally or with a courier   |
| External mail   | No restriction | No restriction  | As registered letter in a security letter or personally transmitted                           | Handover personally or with a courier in a security letter                                    |
| Removable memory media e.g. usb, DVD (no private removable memory media is allowed) | No restriction | No restriction in Ringhals. Otherwise encrypted or with protected password  | Always encrypted or with protected password   | By special decision and then encrypted. Has to be stored in locked rooms.                     |
| Printing  | No restriction | No restriction  | Allowed on network printer if supervised or with access                                       | Supervised on not network printer   |
| Archive   | No restriction | In document management systems in intended archive  | In document management system/ safety box   | In document management system without file/safety box   |
| Storage on a server or database   | No restriction | Authorization control before access   | Authorization control before access   | Not allowed, concerning file  |
| Destruction   | No restriction | In Ringhals ordinary paper recycling containers. Other physical media in a secrecy container at the environmental station | In a paper shredder. Other physical media in a secrecy container at the environmental station | In a paper shredder. Other physical media in a secrecy container at the environmental station |
| Telephone   | No restriction | No restriction  | Only with approved encryption   | Only with approved encryption   |
| Fax   | No restriction | No restriction  | Supervised dispatch and receiving   | Only with approved encryption   |
| Travel  | No restriction | No restriction  | As hand luggage, and supervised   | Under constant supervision, stored in safety box when not handled                             |
| Meetings  | No restriction | Clean whiteboard. External meetings under supervision   | Assess the risk for interception. The room should be locked                                   | Investigate the risk for interception. Don't let it be unguarded                              |
| In own office   | No restriction | No restriction  | Supervised, otherwise in safety box   | In safety box   |

## GENERAL REQUIREMENTS FOR ADMISSION TO RINGHALS

To get admission to Ringhals there are a number of general requirements for certificate and training:

- **Notification of the arrival**

The application for admission must be reported well ahead in time by Ringhals admission responsible, please see chapter 15.1.

- **Result from drug test**

Approved drug test is required for access to the operating range (protected area) and for work lasting more than five days within the site area, please see chapter 3.1.

- **Security background test including register check**

For admission to restricted area, the following forms should be sent in one lot to the admission service at Ringhals, please see chapter 15.1.

- Information about security background and approval for register check
- Approval of register check
- Certificate of conducted security background check

- **Medical examination/periodic control**

Declaration for work in radiological areas, please see chapter 14.1.

- **Dose report (Dose declaration)**

Is required for foreign citizens and for Swedish personnel who have performed work with ionising radiation and when their dose has not been registered in the Central dose register. This may be the case at work abroad, please see chapter 14.2.

- **Required training**

Please see appendix 2.

- Everyone who wishes to gain access, should be able to **prove their identity** with SIS approved ID-document, driving licence or passport. As for foreign citizens the requirement is a valid passport or domestically approved ID-document with English text. The required information on the document is: first and surname, date of birth, photo, validity date, signature and card number.

## TRAINING

The picture below illustrate how Ringhals has categorized the various training programs.



Demand for skills and competence for your assignment (entry requirements) is specified in the procurement.

All personal with access to Ringhals are obliged to participate in the Access training depending on where in the plant access is requested.

Ringhals conducts introduction training for its own new employees. This can also be offered to agency or staff, depending on which company you work for.

Depending on the type of work you should conduct, some other training sessions may be required. This appendix provides information about the most common training programs. As for Ringhals own personel, their current training program is valid.

Certain training programs must be repeated.

## Admission requirements

Demand for skills and competence for your assignment is specified in the procurement.

Examples are:

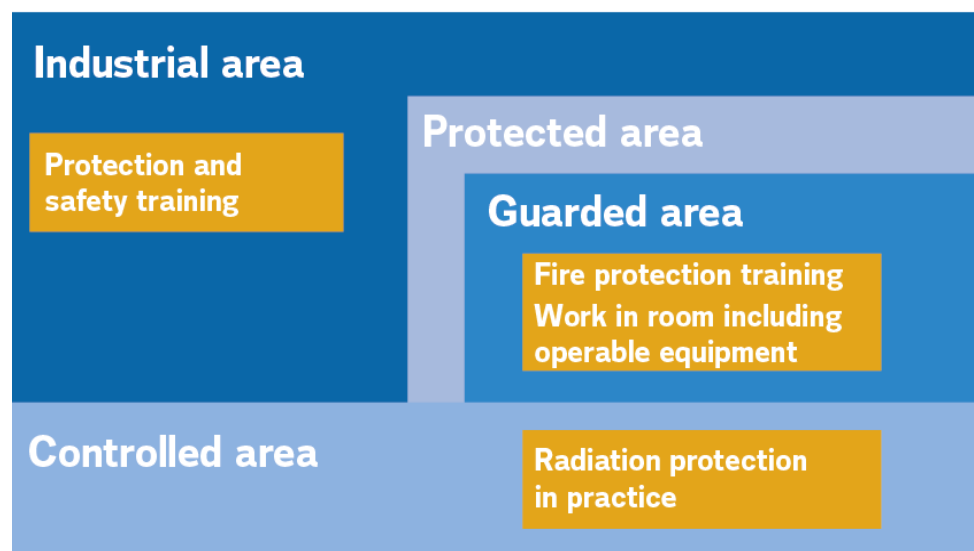
- Hot works
- ESA 14
- Work with voltage
- Lifting training
- Use of industrial truck
- Work at height (mast and pole)
- Scaffolding
- Remove asbestos

Certificate for externally performed training should be sent to Access service at Ringhals.

## Access training

Ringhals has four different Access training programs:

1. **Protection and Safety** – For access to a nuclear facility
2. **Radiation protection in practice** – For access to the radiological controlled area
3. **Ringhals Fire protection** – For access to guarded areas
4. **Work in room including operable equipment** – For access to guarded areas



## Protection and safety

- For whom:** All personnel who wants access to a nuclear facility.
- How:** Web training with a knowledge test. The training shall be completed before arrival at Ringhals.  
If corresponding training has been conducted at another Swedish nuclear power plant, it is also valid for Ringhals.  
The training is available in Swedish and English.
- Repetition:** Every third year.
- Other:** Bring certificate to the Access service-desk at Ringhals for registration.

## Radiation protection in practice - Basic

- For whom:** All personnel who wants access to the radiological controlled area.
- How:** 1 day tuition by teacher conducted at Ringhals.  
The training is available in Swedish and English.  
If corresponding training has been conducted at another Swedish nuclear power plant, it is also valid for Ringhals.
- Repetition:** Is repeated by Radiation protection in practice – Repetition every third year.
- Other:** Reserve participation before arrival to Ringhals by the Access service at Ringhals.

## Radiation protection in practice – Repetition

- For whom:** All personnel who wants continued access to the radiological controlled area.
- How:** The training is conducted in two stages:
1. **Theoretical part**, made as web training before arrival to the class room at Ringhals. When the interactive training is completed successfully, the certificate shall be printed and taken to practical part.
  2. **Practical part**, teacher-controlled tuition at Ringhals (V2). Reservation is done with the help of the Access service at Ringhals.
- The training is available in Swedish and English.
- Repetition:** Every third year.
- Other:** Reserve participation before arrival to Ringhals by the Access service at Ringhals.
- Change 2015** The repetition training is new from 2015 and applies to people who will repeat the Security and safety training with access to radiological controlled area.

## Ringhals fire protection training

- For whom:** All personnel who wants access to the guarded areas at Ringhals.
- How:** Web based on-line training performed prior to arriving at Ringhals.
- Repetition:** Every five years.
- Other:** Bring the certificate and leave it to the **Access service-desk** at Ringhals for registration.

## Work in room including operable equipment

- For whom:** All personnel who wants access to the guarded areas at Ringhals..
- How:** Web based on-line training performed prior to arriving at Ringhals.
- Repetition:** -
- Other:** Print your certificate (4 copies) and leave it to the Access service-desk at Ringhals.

## Training for the task

Depending on what to perform (work with) there are special requirements on training. Below are some examples of training for different job:

- Clean system (webb)
- Fault preventing methods (webb)
- Safe work - electricity
- Safe work – non electric
- Radiation protection technique

## Clean System

**For whom:** All personnel with access to radiological controlled area or other work areas where the conducted work may affect the cleanliness in our systems, for instance work in PWR-turbine, in workshops or in positions such as work supervisors, installation supervisors and constructors.

**How:** Web training with a knowledge test. The training shall be completed before arrival at Ringhals.

The training is available in Swedish and English.

**Repetition:** Every third year.

**Other:** If corresponding training has been conducted at another Swedish nuclear power plant, it is also valid for Ringhals.

Bring certificate to the Access service-desk at Ringhals for registration.

## Fault preventing methods

**For whom:** Everyone who conducts an action within the plant. This include both own and hired staff within operations, maintenance, protection, chemistry, fuel, assembly, control and testing as well as managers and supervisors participating in pre job briefing, etc.

**How:** Web training with a knowledge test. The training shall be completed before arrival at Ringhals .

The training is available in Swedish and English

**Repetition:** No

**Other:** Bring certificate to the Access service-desk at Ringhals for registration.

## Safe work – electricity

**For whom:** Staff who should work as work foremen.

**How:** Teacher-controlled tuition at Ringhals with knowledge test.

Basic training: 2 days

Repetition: 8 hours

**Repetition:** Every third year.

## Safe work – non electric

**For whom:** Personnel who will work as work foremen.

**How:** Teacher-controlled tuition at Ringhals with knowledge test.

Basic training: 2 days

Repetition: 8 hours

**Repetition:** Every third year.

## Radiation protection technique

**For whom:** All own personnel with work assignments within radiological controlled area or persons who supervise staff with work assignments within radiological controlled area as well as work foremen and work supervisors at contractor companies with work assignments within radiological controlled area.

**How:** Teacher-controlled basic tuition (2,5 days) at Ringhals with knowledge test.  
The repetition (0,5 day) is teacher-controlled tuition at Ringhals with knowledge test.

**Repetition:** Every third year.

**Other:** If a corresponding training has been conducted with approved result at another Swedish nuclear power plant, it is also valid for Ringhals.

## Repetition

For some trainings there is a requirements of repetition. Below are some of the most common training with repetition requirements:

### Every third year

- Protection and safety
- Radiation protection in practice
- Radiation protection technique
- ESA 14
- Safe work - electricity
- Safe work – non electric
- Work with voltage

### Every fifth year

- Ringhals fire protection training
- Chemical products
- Hot works
- Hazardous goods (Handling)
- Use of industrial truck

## Administration of training

Further information about training is available on [Ringhals external webbside](#) and Ringhals internal website Insidan/Lärande/Utbildning.

Questions about Access training and reservation to Radiation protection in practice is handled by the Access service at Ringhals. It's also there you leave the certificates from completed training for registration.

The contracting manager or the course administration assist with booking of other training, [Ringhals utbildning](#)

Issues relating to training, requirements and similar, are handled by Ringhals training unit NHU. Send E-mail to [Ringhals utbildning](#)