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Radiation Safety and Technology Course Nuclear Risk & ALARA for SHEQ and RP Officers

If radiation hazards exist in your operations... are you and your staff competent in handling and maintaining the equipment involved and knowledgeable as to radioactive sources and exposure risk? Do you know how to contain leaks, address contamination and secure, transport and dispose of radioactive isotopes? Can you apply regulations under the Hazardous Substances Act for Group III and IV hazardous substances? The National Nuclear Regulator Act provisions as to NORM? Penalties under the OHS and National Environmental Management Acts? The Road Transportation Act requirements as to Class 7 Dangerous Goods (Radioactive) and IAEA SSR-6 transportation mandates?

If you cannot answer YES to these questions ...

... This is the course for you!

Background

Radioactive isotopes are widely used in equipment measuring soil and asphalt compaction, thickness, fluid level and density gauges, XRF Analysers and Gas Chromatograph ECDs. While the instruments use relatively small amounts of radioactive isotopes, misuse or damage can lead to serious permanent injury, fatalities and contamination of the environment. NORM and TENORM risks present in many geotechnical operations include mining and offshore drilling and maintenance.

In common with the principles of compliance applied by IAEA members internationally, the South African Health Products Regulatory Authority (SAHPRA) through the Hazardous Substances Act of 1973 (amended in 1993) controls Group III X-Ray Installations and Group IV radioactive isotopes used in industry and medicine. Besides, there is growing attention to risk associated with non-ionising radiation and laser applications. Special requirements exist for the licensing of Industrial Radiographers. Neglect of safety codes may result in fines, compensation and sentencing.

Training by Allen Associates

Our Radiation Safety Proficiency Courses enhance understanding of sources of ionizing radiation, their application, safe use and procedures in the case of an incident.

Candidates are instructed in radiation theory, biological effects of exposure and dose limits, methods of protection and safe practices. In the General Radiation Safety Courses for SHEQ Officers, we teach broad Radiation Protection practice. This includes rules relating to transport and disposal of radioactive sources as well as procedures to follow in the case of accidental overexposure.

Courses uniquely relate safety theory and law, to users' own fields of use. For instance, in soils geotechnology this means the use of soils and thin-layer nuclear gauges, their maintenance and correct operation for standard counts and Proctor and Marshall results.

The program is designed to satisfy legal requirements and regulations around radiation control in South Africa and SADC countries including the administrative procedures and records required for obtaining, possessing, transporting, or disposing of contaminated or radioactive material.

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Delegates are tested in theory and, where appropriate, in practice. In the case of Hazmat Act candidates the Certificate bears on Regulation 6 3(b) competency required for Radiation Protection Officers to be submitted with RN787 Applications and RN785 RPO and ARPO Changes. The broadened training ambit includes technical operators. Guidance in the preparation of Internal Rules and the status of SA NQF level courses is traversed.

Who Should Attend

The course is set to benefit all persons involved in radiation safety, including:

SHEQ Officers and Practitioners	Radiation Protection Officers
Engineers with supervisory responsibility	Laser Safety Officers
Site Radiation Protection Officers	Laboratory technicians and operatives

Entry requirements

- English literacy and grounding in physics and chemistry are advantageous. Likewise, entry level familiarity with the technical processes involved in their industry as background to our course material: e.g. Civil engineering candidates with *Soils Laboratory experience*.

Course Content

Assistance is offered in preparation of Internal/Local Rules, and content follows the International Atomic Energy Agency (IAEA) and ICNIRP guidelines to which South Africa subscribes, including:

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|--|-------------------------------------|
| • Understanding Radiation | • RPO/LSO Duties & Responsibilities |
| • Safety and Security of Radioactive Sources | • South African Legal regulations |
| • The Biological Effects of Radiation | • Radioactive Waste & Disposal |
| • Radiation & Pregnancy | • Action in Emergencies |
| • Radiation Detection and Instrumentation | • Storage requirements |
| • Transportation Requirements | • Radiation incidents & worldviews |

Safety theory is combined with the operating guidelines of radioactive equipment manufacturers such as Troxler, Campbell Pacific Nuclear, Instrotek, Humboldt, Endress +Hauser, Niton, Agilent and other manufacturers. Live demonstrations include radiological scans using Geiger counter, EMF meters and laser detectors. Practical exercises complete the day where appropriate.

Radiation Course Duration

The intensive one- or two-day courses include an assessment test requiring an 85% pass for a Proficiency Certificate. All candidates are eligible for Attendance Certificates. A unique benefit is provision for individual supplementary instruction and competency testing.

The courses contribute to competency required of South African Health Products Regulatory Authority Radiation Protection Officers (SAHPRA). A Company Certificate summarising attendee names is provided for submission with Applications for an Authority and scrutiny by the Inspectorate.

Candidates may follow through with selected specialised courses which include Nuclear Transport, Waste Disposal, Level & Thickness Gauges, XRF (X-Ray Fluorescence), Industrial Radiography and ECD safety. Besides ionising radiation courses, non-ionising radiation courses include those for Laser Safety Officers (LSOs).

Our PowerPoint multimedia presentations make the material easy to follow. Discussion is encouraged. Each delegate receives handouts including the legal codes and equipment user manuals where applicable. Popular online options include Zoom and MS Teams.

Benefits

On achieving proficiency, candidates will be able under the ALARA philosophy to:

- Provide safety induction for other personnel in safe radiation working practices and the dangers of over-exposure to radiation;
- Establish and maintain operational procedures so that the radiation exposure of workers is kept as far below the authorised limits as is achievable;
- Initiate medical action and investigation of cases of excessive exposure to determine root cause and ensure steps are taken to prevent recurrence;
- Determine whether dosimeters are required for personnel use and if so the records to be kept of the results of monitoring devices;
- Ensure adequate records are kept of all sources, the locations of these sources or the name of the person to whom they have been assigned;
- Ensure that periodic radiological surveys are carried out if needed, and the records of such surveys to be kept, including descriptions of corrective measures;
- Ensure all shields, containers and handling equipment are maintained and
- Ensure periodic leak tests on sealed sources are performed as prescribed.

Course Presenter

David Allen, CEO at Allen Associates, after first-class physics and chemistry, studied law and accountancy at Rhodes University. Articles of Clerkship, Institute of Administration and Commerce of S.A. Management and Accountancy Diploma Branches, with further studies in industrial law and administration were followed by a lectureship in the Business Management Department of now NMU. Career milestones include representing the HP Instrument Product Group in support services in radiotherapy in Eastern Cape Provincial hospitals, industrial systems analysis, safety and preventive maintenance auditing, and RPO appointment under SAHPRA Radiation Control. Certification by the NRF iThemba Laboratory for Accelerator-Based Sciences, relations with the Nuclear Energy Corporation of SA (NECSA) and a Troxler C&DT Certificate, support a wealth of experience behind Allen geotechnical and engineering instrument courses. Participation in EWSETA development of unit standards for the SAQA NQF *Radiation Protection Practitioner* syllabus was a highlight.

Allen Associates, Radiation Safety and Technology, supply, rent out and maintain a fleet of nuclear densometers for soil and thin layer QA, agricultural neutron probes, land survey and test and measurement instrumentation, GPS and EME machine control systems. Their cutting-edge expertise is recognized in SADC countries and beyond.

Manage radiation risk in a safe working environment. Specify the fields in which you require training and register now for a one- or two-day course.

See Application Form

Courses cater for any size group at our offices, on-site, or at venues across the sub-continent.

A company fee per day is charged plus a fee per candidate. Rebates apply for individual attendance. Travel is by quotation. Cancellations are recognized up to 5 days before scheduled dates. Supplementary tuition: free above a cut-off test score. Online options are popular.

For bookings and enquiries:

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