WANO

GLOBAL LEADERSHIP IN NUCLEAR SAFETY

PERFORMANCE OBJECTIVES

FACTSHEET

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Introduction

WANO Performance Objectives set out the highest global standards of excellence in nuclear safety and reliability. They are used in nuclear power stations and facilities worldwide with all technologies and in all cultural contexts. Used alongside a defined criteria, they are the international 'gold standard' for the commercial nuclear power industry. To obtain the best value from the Performance Objectives, WANO members should ensure they are used for all ongoing internal self-assessments of performance, thereby increasing the safety and reliability of their plants, facilities and corporate organisation.

Further information

WANO encourages members to familiarise themselves with the Performance Objectives and regularly use them within their organisations. They are a key reference for constant use in helping members to reach the highest standards of nuclear safety and reliability.

A list of the Performance Objectives

Performance Objectives describe the expected results of effective programmes and activities.
All nuclear power plants and facilities should aim to achieve the Performance Objectives. They do not need to meet each specific criterion under an objective in order to achieve excellence in an area.

The Performance Objectives (without their accompanying criteria) are listed below:

Nuclear Safety Culture:
The organisation's core values and behaviours reflect a focused, collective commitment by all nuclear professionals to make nuclear safety the overriding priority.

Nuclear Professionals:
Nuclear professionals apply the essential knowledge, skills, behaviours and practices needed to conduct their work safely and reliably.

Leadership Fundamentals:
Leaders, by commitment and example, inspire, motivate and align the organisation to achieve safe and reliable station operations, event-free outages, and effective emergency response. They continually strive for improvement by establishing and reinforcing standards of excellence based on industry top performance, and they intervene to correct performance at the earliest signs of decline.

Management Systems:
Management systems are defined clearly, resourced appropriately and implemented effectively to support the vision, values and goals of the organisation. This includes systems for developing and preparing individuals to take leadership roles or assume positions of greater responsibility.

Manager Effectiveness:
Managers apply a management model that reflects a strong commitment to achieving safe, reliable station operations; event-free outages; and effective emergency response. They define priorities, provide support and feedback to one another, and hold each other accountable to achieve the goals of the organisation.

Independent Oversight:
Independent oversight personnel conduct evaluations, inspections, investigations, audits and assessments of station performance to verify nuclear safety standards and regulatory requirements are met and to promote continuous improvement.

Integrated Risk Management:
All personnel exhibit the behaviours necessary to identify, assess, eliminate or reduce, and then manage the nuclear and commercial risks associated with station operation.

Performance Improvement:
Performance monitoring activities and improvement processes are consistently implemented to identify, analyse and correct gaps between current levels of performance and desired management and industry standards of excellence.

Operating Experience:
Internal and industry operating experience is shared and used to prevent events and improve equipment, worker and station performance.

Training Fundamentals:
All personnel involved in training apply the essential knowledge, skills, behaviours and practices needed to develop and maintain qualified, skilled and competent personnel to operate and maintain nuclear facilities in a safe, reliable manner.

Conduct of Training:
Training activities support safe and reliable plant operations by improving individual and team performance.

Human Performance:
Human performance standards and expected behaviours are defined, established and incorporated in an organisation's programmes, processes and training. These standards and behaviours are reinforced to reduce the likelihood of human error, and to achieve sustainable, event-free operations.

Operations Fundamentals:
Operations personnel apply the essential knowledge, skills, behaviours and practices needed to operate the plant safely and reliably.

Conduct of Operations:
Operations programmes, processes and activities are implemented in a manner that promotes sustained high levels of safe and reliable operation.

Operational Priorities:
Personnel and programmes are aligned to identify and prioritise the resolution of operational problems. Organisational roles, responsibilities, processes, procedures and infrastructure are established such that unexpected operational conditions are managed promptly and safely.

Operational Risk:
The plant operational risk associated with equipment removed from service or degraded, or associated with planned plant activities, is maintained low. Inadvertent operational events are prevented through planning, preparation, controls, contingencies and communication.

Online and Outage Work Management:
Work activities are managed during both online and outage periods to support safe and reliable operation.

Maintenance Fundamentals:
All personnel performing maintenance activities apply the essential knowledge, fundamentals, technical skills, behaviours and practices to improve equipment performance, contributing to safe and reliable operation.

Conduct of Maintenance:
Maintenance activities are conducted, and programmes and processes are implemented, in a manner that promotes sustained high levels of safe and reliable operation.

Chemistry Fundamentals:
Chemistry personnel apply the essential knowledge, skills, behaviours and practices needed to implement chemistry activities that support safe and reliable plant operation.

Chemistry Controls:
Chemistry personnel maintain proper chemistry conditions during all phases of plant operations.

Effluent Controls:
Station effluents are monitored and controlled to protect the environment.

Engineering Fundamentals:
Engineering personnel apply the essential knowledge, skills, behaviours and practices needed to ensure equipment performs as required, the plant is maintained within design requirements, performance trends are analysed, margins are controlled, and the plant is operated safely and reliably.

Technical Authority:
Engineering managers and personnel recognise and accept their responsibility to address plant technical issues and act to ensure plant operations are conducted in a manner consistent with plant design. They uphold the plant design and licensing bases and ensure a margin of safety is maintained.

Equipment Performance:
High levels of reliability are achieved for equipment that supports nuclear safety, plant reliability and emergency response capability.

Equipment Failure Prevention:
Preventive and predictive maintenance and performance monitoring are used to prevent failures of equipment important to safety, reliability and emergency response.

Long-Term Equipment Reliability:
Equipment is proactively managed to maintain long-term equipment reliability.

Materials Reliability:
Activities are implemented to preserve materials and components in a manner that supports long-term, reliable plant operation.

Nuclear Fuel Management:
Nuclear reactor fuel is operated, handled and stored in a manner that ensures fuel integrity. Fuel design, fabrication, testing and core design activities support high levels of fuel reliability.

Fuelling Activities:
Fuelling activities, including fuel, cask and reactor component handling and maintenance, are planned and controlled to ensure core reactivity, fuel cooling and the integrity and proper assembly of all components are maintained within requirements.

Design and Operating Margin Management:
Design and operating margins are understood, considered in decision-making and maintained consistent with design and regulatory requirements and operational constraints.

Operational Configuration Control:
Plant operation, maintenance and testing activities are conducted in a manner consistent with the licensing and design bases and maintain configuration control.

Design Change Processes:
Changes to plant configuration, design and licensing bases are evaluated, controlled, tested and implemented while consistency is maintained among the physical plant configuration, design and licensing requirements, and the documented plant configuration.

Project Management:
Projects are selected, planned and implemented with predictable quality and resources that improve materiel condition to maintain safe and reliable plant operation.

Fire Safety:
All personnel are aligned to ensure high standards of fire safety are implemented and maintained.

Fire Protection:
The fire protection programme is implemented to provide a high degree of protection to the plant and personnel by preventing, detecting, controlling and extinguishing fires. Design features and programme controls protect structures, systems and components to prevent significant plant damage and operational challenges and to maintain safe shutdown capability.

Radiological Safety:
All personnel are aligned to minimise dose, reduce source term and implement controls for radioactive contamination and materials.

Radiological Protection Fundamentals:
All personnel who perform radiological protection activities apply the essential knowledge, skills, behaviours and practices needed to implement those activities such that worker and public health and safety are protected.

Conduct of Radiation Protection:
Radiation protection programmes, processes and activities are implemented in a manner that promotes sustained high levels of health and safety for workers and the public.

Industrial Safety:
All personnel are aligned to high standards for industrial work practices and work environments that ensure high levels of personnel safety.

Emergency and Severe Accident Preparedness Leadership:
Leaders align the organisation to prepare for, and respond to, emergencies and severe accidents, mitigate plant damage, achieve a long-term safe stable state, and protect the health and safety of onsite personnel and the public.

Emergency and Severe Accident Preparedness:
Personnel, plans, procedures, facilities and equipment are maintained ready to respond to emergencies, from minor events to severe accidents.

Emergency and Severe Accident Response:
Emergency and severe accident response actions protect the health and safety of the public and station personnel, mitigate plant damage, achieve a long-term safe stable state, and support response actions by offsite authorities and emergency organisations.

Corporate Leadership:
The corporate organisation provides the strategic direction and leadership for the nuclear stations to improve and sustain continuously high levels of safe, reliable operation and emergency response.

Corporate Governance:
Corporate governance provides the needed organisational structures, policies, processes and programmes to establish and implement high standards for the operation, maintenance and organisational support of the nuclear stations.

Corporate Oversight and Monitoring:
Corporate management oversight and monitoring are used to strengthen safety and reliability and to respond promptly to signs of performance decline. Plant safety and reliability undergo constant scrutiny through techniques such as assessments, performance indicators and periodic management meetings.

Corporate Independent Oversight:
Independent oversight provides the chief nuclear officer (or equivalent) and senior corporate managers, up through the board of directors, with an ongoing perspective of performance at the nuclear stations and in the corporate organisation compared to the industry – with a principal focus on nuclear safety, plant reliability and emergency response effectiveness.

Corporate Support Services:
Corporate managers and staff support nuclear stations by providing resources and services to organisations that execute or perform activities related to safe and reliable plant operation.

Corporate Human Resource Management and Leadership Development:
Corporate managers, in partnership with human resource personnel and line managers, anticipate nuclear station personnel needs and work with line managers to recruit and retain competent, knowledgeable and skilled personnel to support safe, reliable and sustained operation of the nuclear station and to support emergency response.

Corporate Communications:
Communications professionals, through a partnership with corporate and station management, develop and implement an integrated communications strategy that supports the organisation's mission, operational focus areas and strategic initiatives and that reinforces nuclear safety.

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