FANR
الهيئة الاتحادية للرقابة النووية
Federal Authority for Nuclear Regulation

United Arab Emirates

ANNUAL REPORT 2017

Federal Authority | هيئة اتحادية

...to realise the **hopes** and **ambitions** of our people, and we call upon everybody to work hard to develop our country.

WE SHALL SPARE NO EFFORT...

H.H. SHEIKH KHALIFA BIN ZAYED AL NAHYAN

President of the
United Arab Emirates
and Ruler of Abu Dhabi

H.H. SHEIKH MOHAMMED BIN RASHID AL MAKTOUM

Vice President of the United Arab Emirates, Prime Minister and Ruler of Dubai

H.H. SHEIKH MOHAMMED BIN ZAYED AL NAHYAN

Abu Dhabi Crown Prince and Deputy Supreme Commander of the UAE Armed Forces

AN EXCELLENCE JOURNEY TO THE FUTURE

In 2009 FANR embarked on a journey to ensure the future growth and prosperity of the UAE and its people through the highest standards of nuclear safety, security and safeguards. The year 2017 marked another milestone year towards becoming a globally-recognised nuclear regulator.

This Annual Report is an account of the activities of the Federal Authority for Nuclear Regulation (FANR), which must be submitted once a year to the Minister of Presidential Affairs pursuant to Article (11) of the Federal Law by Decree No. 6 of 2009 Concerning the Peacful Uses of Nuclear Energy. It covers the period from 1 January 2017 to 31 December 2017.

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FROM FANR'S CHAIRMAN

MESSAGE

H.E. Abdulla Nasser Al Suwaidi
Chairman, Board of Management

FANR's five year strategic goals are to ensure the peaceful, safe and secure use of nuclear energy and radiation sources as well as the sustainability of the UAE regulatory infrastructure.

I am pleased to present the Annual Report with an account of FANR's activities for 2017. The past year has seen excellent progress towards realising FANR's vision of being a globally recognised nuclear regulator.

In 2017 FANR announced its five year strategic goals to ensure the peaceful, safe and secure use of nuclear energy and radiation sources as well as the sustainability of the UAE's regulatory infrastructure. As the country moves rapidly forward with developing its nuclear sector, FANR has made notable progress in 2017 in terms of honouring the United Arab Emirates' commitments under the 2008 Policy of the UAE on the Evaluation and Potential Development of Peaceful Nuclear Energy.

FANR is committed to the highest standards of safety, security and non-proliferation. The year 2017 also marked the 41st anniversary since the UAE joined the International Atomic Energy Agency (IAEA) and started a successful partnership of cooperation.

This ongoing cooperation enables FANR to ensure world-class safety standards and international best practices with regard to nuclear regulation.

FANR continued in its mission to honour the UAE's commitments in the development of peaceful nuclear energy. In March 2017 the UAE presented its third national report at the Seventh Review Meeting of the Contracting Parties to the Convention on Nuclear Safety. The Review Meeting reviewed the Report and concluded that the UAE fulfilled all its obligations in the Convention to which it adhered to in 2009.

In October 2017 the UAE submitted its third national report to the IAEA as part of the UAE's participation in the sixth Review Meeting of the contracting parties to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, which is scheduled to take place in May 2018. Contracting Parties will review the reports and assess if the Contracting Parties fulfill the convention's obligations.

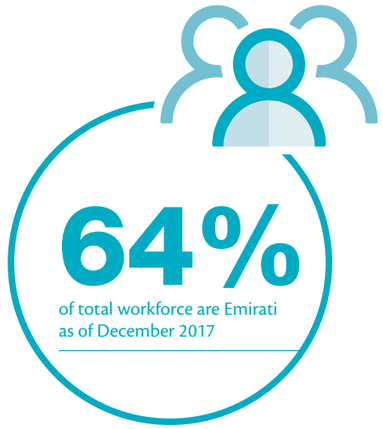
The United Arab Emirates' nuclear energy programme is considered the fundamental basis for enhancing the energy sustainability and economic growth in the country. It is also considered one of the most ambitious programme worldwide.

FANR is proud of the role it plays in realising the nuclear programme, and in the last eight years it has committed to the highest international standards and has used strong quality management tools to create and enforce regulations that protect our nation's people and environment from potential nuclear and radiation hazards.

FROM THE DIRECTOR GENERAL

MESSAGE

Christer Viktorsson
FANR Director General



In 2017 FANR's total workforce was 222 employees, 64% of which are Emirati. In the past year 17 Emirati also graduated from FANR's flagship training and development programme "The Developee Engineers Programme".

It is our commitment to ensure the safety and security of the Barakah Nuclear Power Plant. FANR is currently reviewing the operating licence application, which was made by Nawah Energy Company for Units 1 and 2 of the Barakah Nuclear Power Plant at Al Dhafra. In 2017 FANR conducted 40 inspections related to the Barakah Nuclear Power Plant. Such inspections included the verification of the licensee's operator training and certification programme and organisational readiness for Unit 1 operation.

The operating licence for Unit 1 will be issued when the operator meets all regulatory requirements. Furtheromre, the operating licence application for Units 3 and 4 was received in March 2017.

In 2017 FANR continued the development and revision of a number of regulations and regulatory guides in accordance with FANR's five-year regulatory framework plan. Some of these regulations address secure import and export of radioactive sources as well as physical protection plans while continuously ensuring the best international practices in regulation.

FANR endeavours to continue its regulatory oversight to protect the public, the workers and the environment by also conducting high- quality regulatory programmes for areas where radiation applications are used in both medical and industrial sectors.

In 2017, FANR issued 260 licences to conduct activities using regulated material in different fields. The majority of licences issued were for medical purposes such as medical diagnostics, nuclear medicine, radiotherapy and dental X-ray, and the remainder was for non-medical purposes such as industrial radiography, well-logging and security screening. FANR also issued 40 licences related to the transfer of nuclear material.

FANR's vigorous inspection programme continued throughout the year, and as of December 2017 FANR had carried out over 700 inspections across the country. We have observed that our activities have led to an improvement of the safety culture of the country's nuclear sector in particular there was been a better understanding from licensees with regard to radiation safety and security.

Research and development are key cornerstones in building and maintaining high levels of nuclear and radiation safety. FANR's Board of Management approved a Research and Development Policy to support the regulatory programmes of FANR and to help develop and attract Emirati to the nuclear sector. The Policy also will foster scientific activities such as the publication of research papers and the participation in scientific and technical conferences. It also provides a technical basis for FANR's regulatory activities.

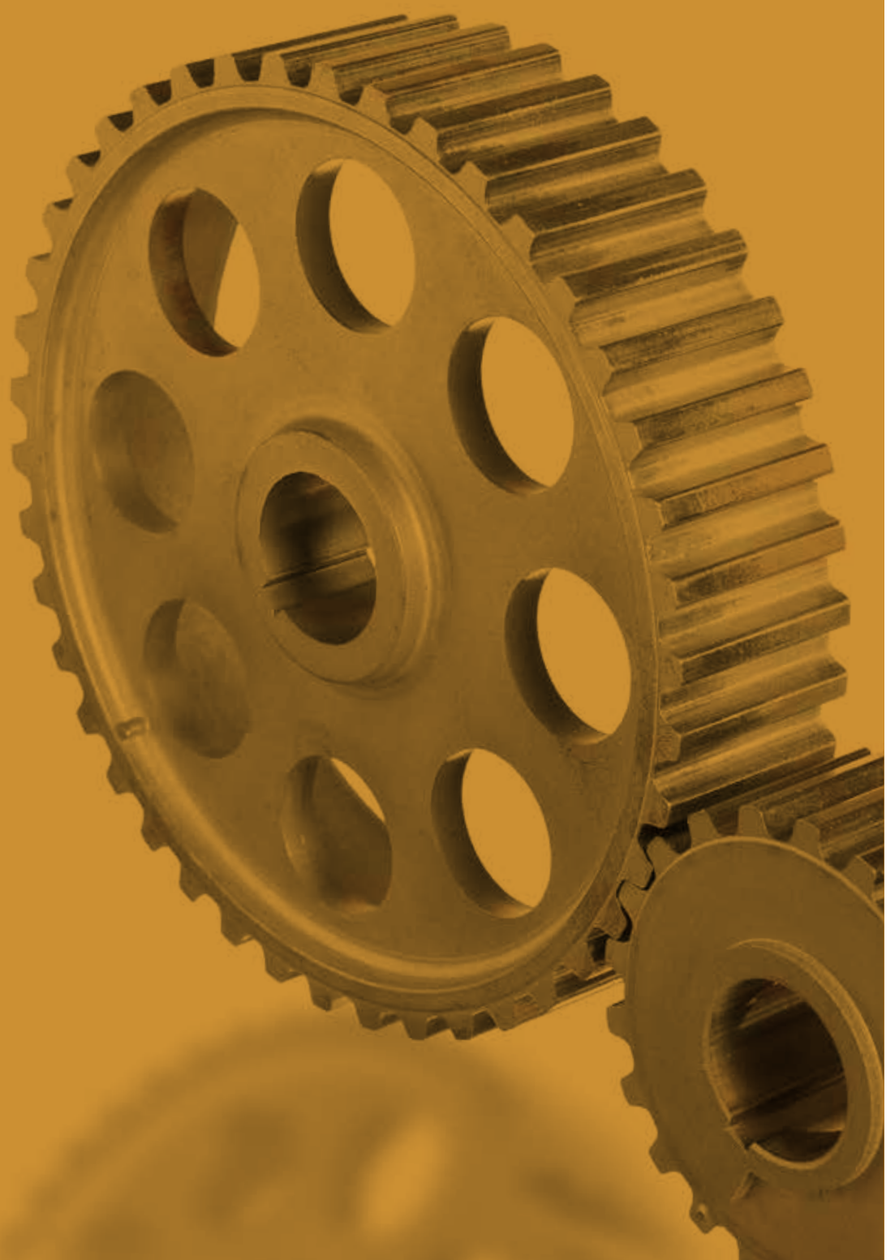
FANR remains dedicated to developing Emiratis in the nuclear sector, and this forms part of its capacity-building and sustainability efforts. In 2017 FANR's total workforce was 222 employees, 64% of which are Emirati. In the past year 17 Emiratis also graduated from FANR's flagship training and development programme, the Developee Engineers Programme. This reflects FANR's dedication to the long term development of Emirati expertise in the nuclear regulatory sector.

FANR reach out regularly to its stakeholders including the general public and the licensees to present regulatory information sessions tailored to stakeholders needs. The 2017 sessions saw the attendance of more than 900 licensees.

We at FANR are committed to the highest standards of safety, security and non-proliferation. And it is this commitment that continuously drives us forward on our mission of excellence.

EXCELLENCE

In the past year FANR achieved numerous milestones in the key areas of nuclear safety, nuclear security, radiation safety and safeguards.



ACHIEVING EXCELLENCE IN 2017

BARAKAH NUCLEAR POWER PLANT

Over 85% of the review and assessment of the operating licence application from the Nawah Energy Company to operate reactor Units 1 and 2 at the Barakah Nuclear Power Plant has been completed. The operating licence application for Units 3 and 4 was received in March 2017.

OPERATIONAL READINESS

In addition to evaluating the technical readiness of Units 1 and 2 of the Barakah Nuclear Power Plant, FANR continued to evaluate and verify the operational readiness of the operating organisation.

These verifications are supported primarily through conducting inspection activities with a focus on the readiness of the programs, procedures, and people required to safely operate Unit 1.

INSPECTIONS

In 2017 FANR conducted numerous radioactive source security inspections across the UAE. These included 76 inspections of licensee storage facilities and 82 licensee transport vehicle inspections.

A total of 55 routine inspections were conducted on companies around the UAE to ascertain their compliance with the provisions of the Regulation on the Export and Import Control of Nuclear Material, Nuclear Related Items and Nuclear Related Dual-Use Items.

FANR's vigorous radiation safety inspection programme continued throughout the year, and as of December 2017 FANR's radiation safety inspectors had carried out 2,155 inspections, 379 of which were completed in 2017.

THE SECONDARY STANDARDS DOSIMETRY LABORATORY (SSDL)

The SSDL located on the campus of Khalifa University, reached a major milestone in 2017 when three irradiators were installed, tested and validated. The SSDL has also passed two proficiency tests organised by the International Atomic Energy Agency (IAEA). The IAEA also accepted the UAE's application to be member of the IAEA/WHO SSDL international network.

LICENCES

As of December 2017 FANR issued a total of 262 licences, including new licences, renewals, and amendments, to conduct activities using regulated material in different fields. The process of licensing the possession, use and handling of nuclear material also continued during 2017 with

the renewal of over 30 licences that were first issued in 2014. FANR also issued 40 licences related to the transfer of nuclear material and regulated items.

REGULATIONS AND REGULATION GUIDELINES

In line with its commitment to periodically review elements of the FANR regulatory framework, the following regulations were reviewed in 2017:

- FANR-REG-04 Version 1: Radiation Dose Limits and Optimisation of Radiation Protection for Nuclear Facilities.
- FANR-REG-09 Version 1: Export and Import Control of Nuclear Material, Nuclear Related Items and Nuclear Related Dual-Use.

85%
of the review and assessment of the licence application to operate a nuclear facility for reactor Units 1 and 2 at Barakah completed

55
routine inspections conducted countrywide

2155
radiation safety inspections conducted as of December 2017

- FANR-REG-12 Version 1: Emergency Preparedness for Nuclear Facilities.

Progress also continued in 2017 towards the issuance of several new regulations and regulatory guides including the following:

- FANR-REG-18: Application of Penalties
- FANR-REG-22: Decommissioning Trust Fund
- FANR-REG-27: Disposal of Radioactive Waste
- FANR-REG-29: Regulation on Authorization of Regulated Activities in Facilities other than Nuclear Facilities

Fully operational Emergency Operations Centre

EMERGENCY OPERATIONS CENTRE

In 2017 FANR's Emergency Operations Centre (EOC) was made fully operational, complete with state-of-the-art facilities, equipment and tools. The facility was used during multiple emergency exercises and training throughout the year.

IAEA EXPERT REVIEW MISSIONS

Two International Atomic Energy Agency (IAEA) Expert Review Missions were completed in early 2017 to review both the approach to FANR's internal transition plan and the approach taken by FANR to verify the readiness of the operating company, the Nawah Energy Company.

EMIRATISATION

In 2017 FANR'S total workforce reached 222 employees, 64% of which are Emirati. This demonstrates FANR's commitment to the development of Emiratis in the nuclear sector.

CONVENTION ON NUCLEAR SAFETY (CNS) REPORT

In March 2017, the UAE presented its Third National Report at the Seventh Review Meeting of the Contracting Parties to the Convention on Nuclear Safety. The purpose of the report is to describe the legislative, regulatory and administrative measures that the UAE has taken to fulfil its obligations as a Contracting Party to the Convention on Nuclear Safety. H.E. Ambassador Hamad Al Kaabi, UAE Permanent Representative to the International Atomic Energy Agency (IAEA), presented the report during the meeting, which took place at the headquarters of the IAEA in Vienna, Austria. The report, prepared by FANR, reflected input from UAE organisations involved in the nuclear energy programme and highlighted significant progress in the UAE's nuclear energy programme since the last Contracting Parties Review Meeting in 2014.

JOINT CONVENTION ON THE SAFETY OF SPENT FUEL MANAGEMENT AND ON THE SAFETY OF RADIOACTIVE WASTE MANAGEMENT REPORT

In October 2017 FANR submitted the UAE's Third National Report to the IAEA as part of the UAE's participation in the Sixth Review Meeting of the Contracting Parties to the Joint Convention, which is scheduled to take place in May 2018. Contracting parties to the Joint Convention report on the measures they have taken to implement the obligations of the Convention.

INFORMATION SECURITY

In 2017 FANR's Board of Management endorsed the Information Security Policy that complies with the national and best practices. The Policy describes proactive and reactive controls to protect FANR's information and information assets from a wide range of security risks and threats by establishing, implementing, operating, monitoring, reviewing, maintaining and improving information security based on three security objectives: Confidentiality, Integrity and Availability (CIA).

BUSINESS CONTINUITY

In 2017 FANR initiated a management process to ensure the development of processes that identify and evaluate potential risks to FANR. The process also develops FANR's resilience by ensuring critical objectives are met and that the resources necessary to achieve those objectives are available to eliminate risks that might disrupt FANR's operations.

ESTABLISHMENT OF NATIONAL RESEARCH & DEVELOPMENT (R&D) PROGRAMME

In June 2017 the FANR Research & Development Policy was approved by the Board of Management. The main objective for establishing a government-funded nuclear R&D programme is to provide the necessary conditions for the safe and

reliable implementation of peaceful nuclear activities in the UAE, to develop know-how, expertise and institutional capabilities in the country to allow for excellence and innovation, and to ensure meaningful participation in international research and development. This R&D programme will help build the long-term capacity to support the UAE's nuclear energy programme through creating partnerships with other national and international research organisations.

INTERNATIONAL MINISTERIAL CONFERENCE

The International Ministerial Conference on Nuclear Power in the 21st Century was organised by the (IAEA) in cooperation with the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development. It was hosted by the Government through the FANR and Ministry of Energy.

Over 600 participants from 68 IAEA Member States took part in the conference.

64%
of total workforce are Emirati as of December 2017

222 employees

262
licences issued to conduct activities using regulated material in different fields

FANR IN BRIEF

CORPORATE PHILOSOPHY

Since it was established in September 2009 as regulatory body for the nuclear sector in the UAE, pursuant to the Federal Law Concerning the Peaceful Uses of Nuclear Energy by Decree No. (6) of 2009, FANR continues with its mandate to protect the country's public, workers and environment in accordance to best international practices.

VISION

To be globally recognised as a leading nuclear regulator

MISSION

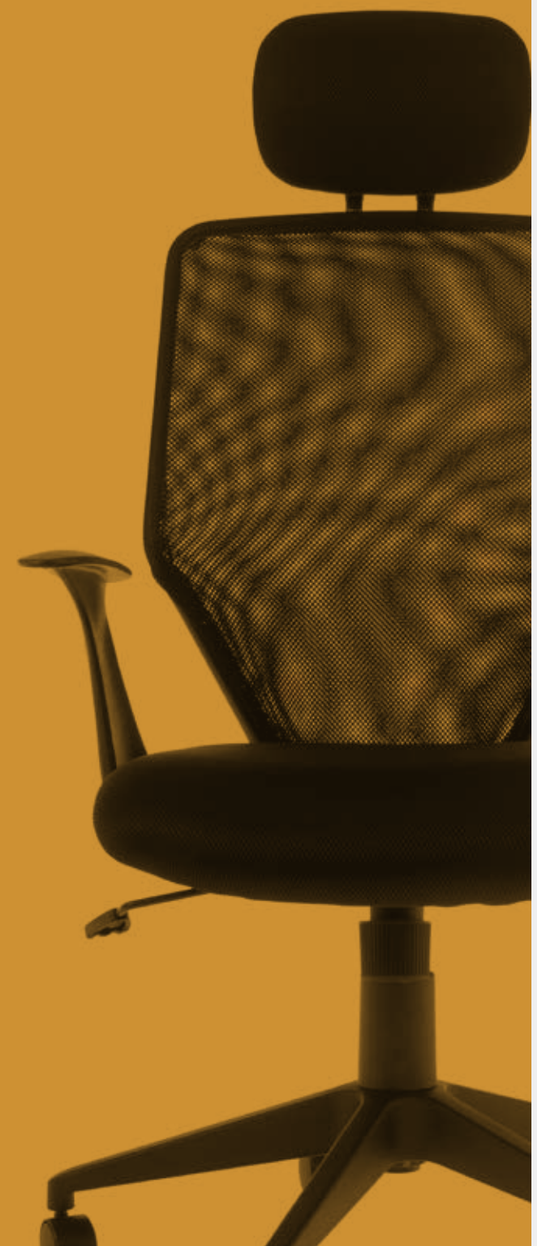
To protect the public and the environment from the harmful effects of ionising radiation and to ensure the exclusively peaceful use of nuclear energy in an integrated manner with the concerned authorities and according to international best practices; as well as capacity building of Emiratis in the nuclear field and various technical fields.

CORE VALUES

- Safety culture
- Transparency
- Collaboration
- Independence
- Excellence

LEADERSHIP

The Board of Management is FANR's decision-making body and is appointed by a resolution of the UAE Cabinet. The Board is responsible for making key decisions that impact the performance of FANR.



FANR BOARD OF MANAGEMENT IN 2017

H.E. Abdulla Nasser Al Suwaidi
Chairman

H.E. Ambassador Hamad Al Kaabi
Deputy Chairman

H.E. Mr. Ali Khalfan Al Dhaheri
Board Member

H.E. Dr. Abdul Qader Ebrahim Alkhayat
Board Member

H.E. Mrs. Razan Khalifa Al Mubarak
Board Member

H.E. Dr. Ali Mohamed Shaheen Ahmed
Board Member

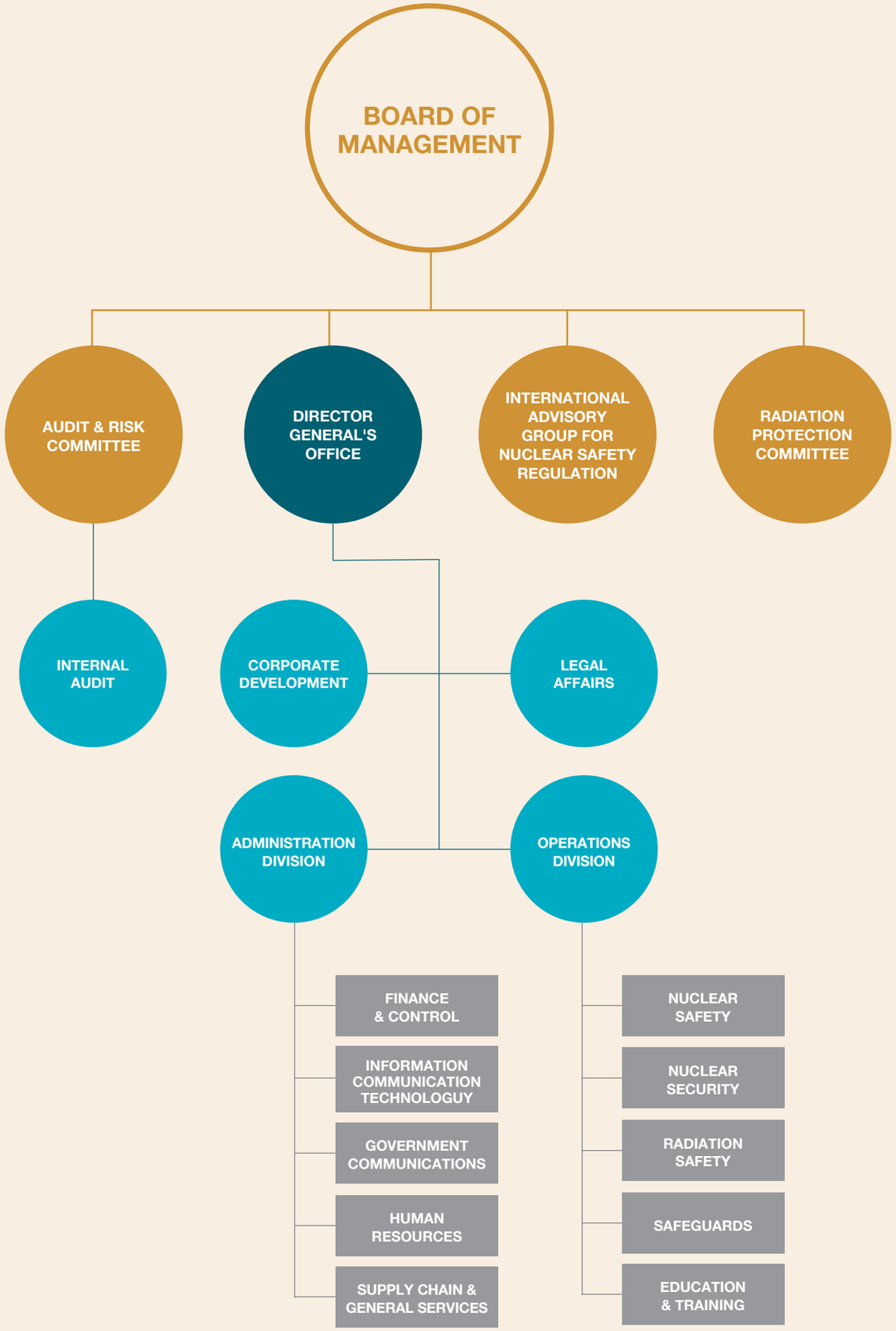
H.E. Mr. Sultan Abdullah Sultan AL Hebsi
Board Member

FANR'S ORGANISATIONAL STRUCTURE

FANR's organisational structure ensures that it delivers on the highest standards of nuclear safety, security and non-proliferation.

Under FANR's Director General's Office there are two Divisions, Administration and Operations, the Legal Affairs and Corporate Development Department.

Internal Audit, which is an independent evaluation function established to evaluate the adequacy and effectiveness of FANR's controls, systems, policies and procedures, falls under the oversight of the Audit and Risk Committee.



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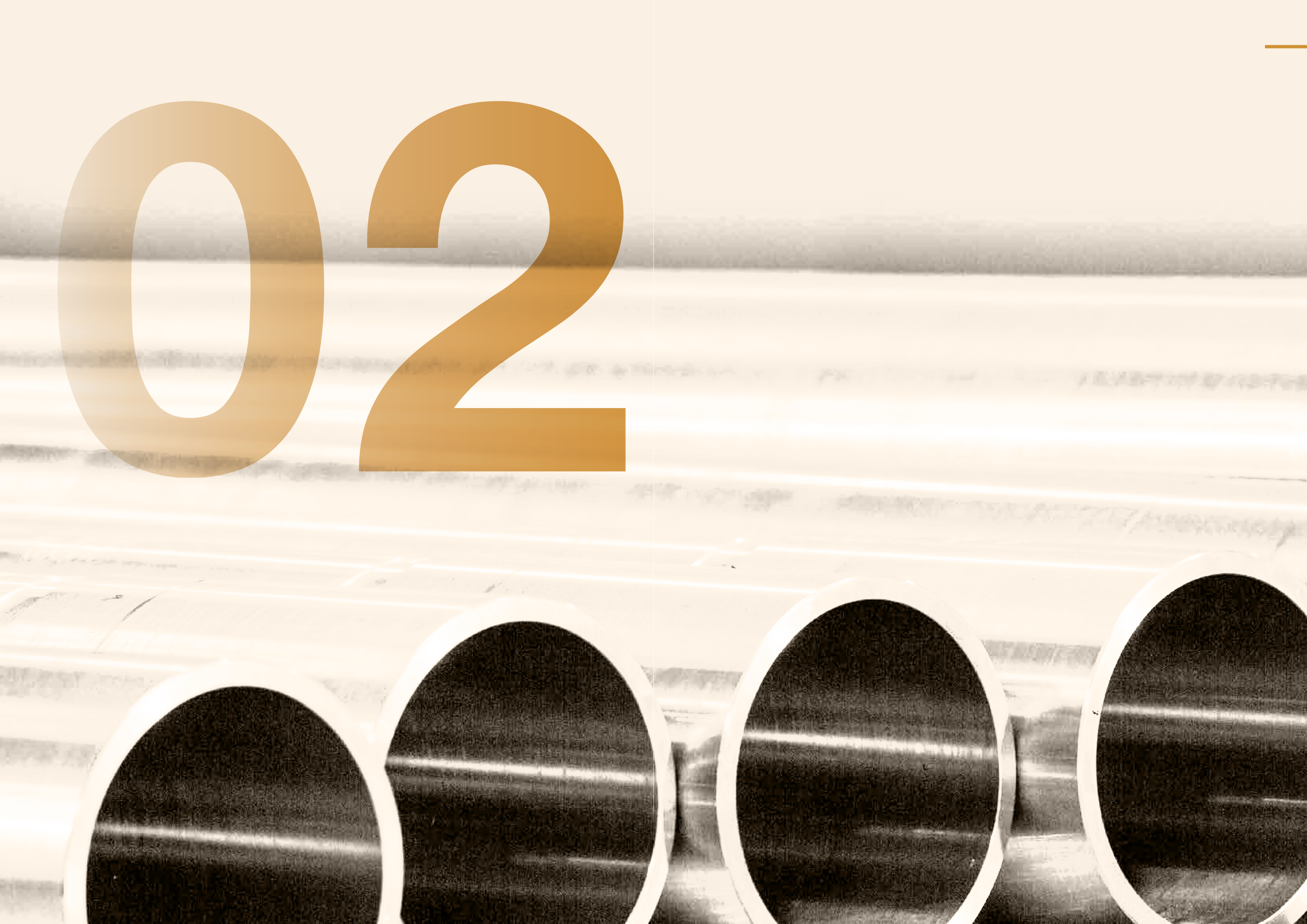


BARAKAH NUCLEAR POWER PLANT

LICENCES AND ASSESSMENTS

As of December 2017 FANR had reviewed and assessed over 85% of the licence application from Nawah Energy Company (NAWAH) to operate reactor Units 1 and 2 of the Barakah Nuclear Power Plant. Inspections to evaluate the operational readiness of Unit 1 are ongoing and an operating licence will be issued when FANR has determined that all regulatory requirements are met. The operating licence application for Units 3 and 4 was received in March 2017 and its review will commence after the licence has been authorised for Unit 1.

In December 2016 Emirates Nuclear Energy Corporation ENEC submitted revision four of its Cyber Security Program Manual and FANR reviewed the implementation of the method and device put in place against cyber threat.

In 2017 the (ENEC) submitted for regulatory approval the security arrangements for the physical protection of the Barakah Nuclear Power plant.

RECEIPT OF NUCLEAR FUEL AT BARAKAH NUCLEAR POWER PLANT

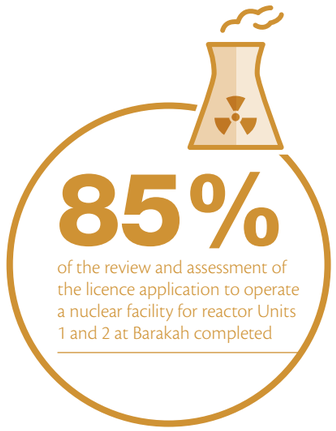
Following the issuance of a licence to transport unirradiated nuclear fuel to the Barakah Nuclear Power Plant, ENEC organised five shipments from the Republic of Korea in accordance with the Transport Security Plans approved by FANR. The storage of the nuclear fuel on site was done following security measures in accordance with the physical protection plan approved by FANR.

The application for possession, handling, transfer, introduction, removal, and storage of unirradiated nuclear fuel for Barakah Unit 2 was submitted by ENEC in March 2017. The review of this application is ongoing.

SAFEGUARDS IMPLEMENTATION AT BARAKAH

2017 saw the achievement of major and historic milestones in UAE nuclear non-proliferation. The receipt of nuclear material at the Barakah Nuclear Power Plant meant that the country's Small Quantities Protocol (SQP) became non-operational and that certain provisions of the Safeguards Agreement were no longer held in abeyance. One particular milestone was the making of Subsidiary Arrangements to the Safeguards Agreements that set-out details of IAEA safeguards implementation in the UAE. This agreement, entering into force

Over the last year, FANR has conducted over 40 inspections at the Barakah Nuclear Power Plant on nuclear safety, security and safeguards to ensure the successful development of the nation's first nuclear power plant.



in June 2017, was the product of ongoing technical safeguards cooperation between the International Atomic Energy Agency (IAEA) and FANR since 2010.

The inspection efforts during 1017 included several hundred safeguards inspections at the Barakah Nuclear Power Plant and over 170 at locations outside facilities. FANR conducted numerous outreach activities and national workshops in cooperation with the IAEA. The inspection and outreach activities resulted in the identification and training of approximately 80 companies that use nuclear material across the seven emirates. A significant project to specify, develop, test and implement a State System of Accounting and Control of Nuclear Material (SSAC) software also came to fruition at the start of the year. The SSAC system was an important milestone in allowing the UAE to submit nuclear material accounting reports to the IAEA in compliance with the Safeguards Agreements.

The inspection and outreach activities also led to an increase in safeguards compliance with FANR regulatory requirements and, together with the SSAC, will allow FANR to submit a correct and completed reports to the IAEA.

FANR inspections of the Barakah Nuclear Power Plant operator's safeguards systems were conducted in 2017 to confirm that all aspects of nuclear material accountancy and control are appropriately implemented ahead of fresh fuel-loading to the reactor core.

FANR will continue its mission to achieve the highest standards of nuclear non-proliferation and to support IAEA safeguards implementation at all the Barakah Nuclear Power Plant Units and elsewhere across the UAE in 2018.

BARAKAH INSPECTIONS

Throughout 2017 FANR staff continued to monitor and evaluate licensed activities at the Barakah Nuclear Power Plant in order to verify compliance with FANR regulations.

The deployment of five resident inspectors to the owner controlled area at Barakah was effective in supplementing FANR's inspection programme. Their scope of work included monitoring the day-to-day construction and commissioning of activities at the nuclear power plant to check adherence to FANR regulatory requirements. Their oversight included witnessing and reviewing commissioning tests results both in the nuclear power plant and from the main control room of Unit 1.

FANR inspectors carried out 26 regulatory inspections. These regulatory inspections included verification of the licensee's operator training and certification programme and organisational readiness operations at Unit 1.

The inspections related to organisational readiness were conducted to confirm that the Nawah Energy Company's programmes, procedures and people are fully in place to ensure unit 1 will be operated in accordance with regulatory requirements. Most of the inspections were conducted at the nuclear power plant itself. Others took place at the headquarters of both Emirates Nuclear Energy Corporation and the Nawah Energy Company, and at their supplier companies in the Republic of Korea and other international locations.

In 2017, two security inspections by FANR had been carried out at the Barakah Nuclear Power Plant to verify the effectiveness of the security plan for storing fresh nuclear fuel. Another nuclear security inspection was completed by FANR in October 2017 to ensure that cyber security has been implemented in accordance with FANR's requirements.

THE TRANSITION TO OPERATIONS

ENSURING OPERATIONAL READINESS

As the functions and responsibilities of regulatory oversight change from the construction phase of the nuclear power plant to the operations phase, FANR has established its plan to effectively manage this transition. This comprehensive plan focused on areas such as training, human capital, technical support organisations and other activities required to be in place for plant operations.

In 2017 FANR implemented plans to ensure its own readiness and to verify the readiness of the Barakah Nuclear Power Plant for its operational phase.

NUCLEAR SAFETY

FANR continues to remain dedicated to the highest levels of nuclear safety in its journey of excellence.

DEDICATED TO THE HIGHEST LEVELS OF NUCLEAR SAFETY

FANR is the nuclear regulatory body responsible for regulating the design, siting, construction, operation and decommissioning of all nuclear facilities in the UAE including nuclear power plants. Our role is clearly differentiated from that of the operator, who is in charge of running and operating the nuclear power plant or facility. The final responsibility for safety rests with the operator of the facility. Our responsibilities within the area of nuclear safety extend to regulations and regulatory guides, licences, safety assessment, inspections and enforcement.

In 2017 FANR continued an in-depth review and assessment of the application for an operating licence for Unit 1 of the Barakh Nuclear Power Plant. FANR will grant a licence only when it is satisfied that the applicant's proposals and commitments comply with FANR's stringent safety requirements. In 2017 FANR continued inspections of the construction of all four reactors at the Barakah site. For this inspection programme FANR has a permanent FANR resident inspector's office at the nuclear power plant with five resident inspectors monitoring construction and commissioning activities full time. During the year, FANR completed 26 regulatory inspections of the site construction and the operational readiness of the future operator Nawah Energy Company.

CONSTRUCTION AND OPERATING EXPERIENCE FEEDBACK PROGRAMME

In 2017 FANR continued its programme of reviewing external Construction and Operating Experience Feedback (COEF). The aim of a COEF programme is to review events that have occurred both internationally and in the UAE in order to learn lessons and implement corrective actions to avoid similar events occurring again. At FANR the Construction and Operating Experience programme is one of its Integrated Management System (IMS) core processes and provides the following benefits:

- Analysis of trends to identify patterns in events and conditions for the purpose of identifying and taking actions to address underlying causes and prevent the repetition of undesirable events or conditions.
- Learn lessons and gain knowledge through experience which, when applied, will prevent recurrence of undesired events or conditions and promote improvements in nuclear and radiological safety, security, and safeguards.

In 2017 FANR conducted several COEF screening meetings to assess recent COEF reports and distribute them internally for review or action.

NUCLEAR SECURITY

ANNUAL EXERCISE ON CATEGORY 1 RADIOACTIVE SOURCES

The Code of Conduct on the Safety and Security of Radioactive Sources assigns the designation of Category 1 to those radioactive sources that if not securely protected could cause permanent injury or fatality. FANR continued to build upon its efforts to ensure a swift response to security incidences involving Category 1 radioactive sources, and in December 2017 FANR coordinated and assisted in drills undertaken in the Emirate of Ajman.

NUCLEAR SECURITY INSPECTIONS ACROSS THE COUNTRY

In 2017 FANR conducted numerous inspections across the UAE. These included 76 inspections of licensee storage facilities and 82 licensee transport vehicle inspections. FANR also conducted a workshop for licensees on the security of radioactive sources, and awareness sessions on the same subject matter for customs and border control officers, and for local law enforcement entities.

FANR adheres to international nuclear security standards to ensure the safety of the UAE, its people and its environment.

55 safeguard routine inspections

76 inspections of licensee storage facilities

82 licensee transport vehicle inspections

SAFEGUARDS

FANR is dedicated to preventing the proliferation of nuclear weapons through an enhanced, comprehensive and transparent safeguards system.

WORKSHOPS AND TRAINING SESSIONS

As part of FANR's commitment to excellence, FANR has conducted several workshops and training sessions throughout the year for different UAE stakeholders. A National Workshop on Nuclear Export/ Import Obligations in the UAE was held from 15 to 17 October 2017 with participants from Australia, Germany, the International Atomic Energy Agency (IAEA), the European Union, several foreign embassies, the Ministry of Foreign Affairs and International Cooperation, the Committee for Goods & Material Subjected to Import & Export, federal and local Customs authorities, and the Nawah Energy Company.

The objective of the workshop was to exchange information with international participants about the best practices of export control.

7TH ANNUAL MEETING WITH NSSC

The 7th Annual Meeting between FANR's Safeguards and Security and the Republic of Korea's Nuclear Safety and Security Commission (NSSC) was held from 13 to 15 of November 2017 at FANR's Headquarters. The participants discussed several technical topics of common interest and highlighted the many positive outcomes of the bi-annual meetings since 2011, emphasising the mutual benefits of those meetings in supporting both the NSSC and FANR as the Barakah Nuclear Power Plant transitions from construction to operation. They also emphasised the importance of the Information Sharing System (ISS), which was developed as an outcome of collaboration through technical and annual meetings as a tool for exchanging information.

SAFEGUARD INSPECTIONS ACROSS THE COUNTRY

A total of 55 inspections were conducted on companies around the UAE to ascertain their compliance with FANR regulations since 2014.

RADIATION SAFETY

FANR ensures the high standards of radiation protection for the use of ionising radiation in medicine, industry and nuclear facilities through its regulatory oversight of the nuclear sector.

THE SECONDARY STANDARDS DOSIMETRY LABORATORY (SSDL)

The SSDL, located on the campus of Khalifa University, reached a major milestone in 2017 when three irradiators were installed, tested and validated. The SSDL has also passed two proficiency tests organised by the International Atomic Energy Agency (IAEA). These achievements confirm that now, for the first time in the UAE, FANR's SSDL has the technical capacity to supply radiation calibration services to the end users of radiation measurement items in medical, nuclear and industrial sectors. The IAEA has also accepted the UAE's application to be member of the IAEA/WHO SSDL international network. This membership will facilitate the technical collaboration between the IAEA, FANR SSDL and other SSDLs in the world, which is in line with the UAE's commitment to comply with the most demanding international standards and best practices.

RADIATION INSPECTIONS ACROSS THE UAE

FANR's vigorous radiation safety inspection programme continued throughout the year, and as of December 2017 FANR's radiation safety inspectors had carried out 2,155 inspections, 379 of which were completed in 2017. During the year FANR's inspectors also noticed a better understanding from licensees with regard to radiation safety and protection, as well a greater awareness of FANR's roles, responsibilities and the importance of a strong safety culture.

EXCELLING IN ENVIRONMENTAL PROTECTION

In 2017 FANR remained committed to continuously monitoring the radioactivity levels in the UAE environment through its environmental laboratory at the Khalifa University in Abu Dhabi, and various monitoring stations across the UAE. More than 50 samples were collected in 2017 from different media such as water, soil, sediment, fish and vegetation.

LICENCES

In 2017 FANR continued to apply rigorous measures with regard to licences while remaining committed to improving the efficiency and effectiveness of the licensing process.

As of December 2017 FANR had issued a total of 262 licences to conduct activities using regulated materials in different fields. The majority of licences issued were for medical purposes such as medical diagnostics, nuclear medicine, radiotherapy and dental X-ray, and the remainder was for non-medical purposes such as industrial radiography, well loggings and security screening.

The process of licensing the possession, use and handling of nuclear material continued in 2017 with the renewal of over 30 licences that were first issued in 2014. FANR's Export and Import issued 40 licences related to the transfer of nuclear material and regulated items. It also continued its successful cooperation with federal and local customs authorities in identifying Regulated Items requiring a licence, conducting inspections for suspicious transfers and receiving customs manifests.

262

licences issued to conduct activities using regulated materials in different fields

REGULATIONS

FANR's regulations take into account the International Atomic Energy Agency (IAEA) safety standards and other nuclear regulatory best practices.

FANR REGULATORY ROADMAP

In 2017 FANR commenced on the development or revision of seven regulations and 13 regulatory guides in accordance with the FANR Regulatory Roadmap, which was endorsed by the Board of Management in July 2017. All FANR regulations and regulatory guides are subject to review and update as needed or every five years.

REVISION OF REGULATION 23 - SECURITY OF RADIOACTIVE SOURCES

The objective of this revision was to review and to update, if necessary, the regulation to take into account the recommendations made by the IAEA International Physical Protection Advisory Service (IPPAS).

In 2017 FANR started to develop a regulatory guide on the implementation of the Convention on the Physical Protection of Nuclear Material. This regulatory guide reflects also the best nuclear security practices as per IAEA nuclear security series.

NEW REGULATION FOR THE SECURE IMPORT/EXPORT OF HIGH RISK RADIOACTIVE SOURCES

The IAEA Code of Conduct on the Safety and Security of Radioactive Sources provides guidance on how States can safely and securely manage radioactive sources. The general objective of the Code of Conduct is to achieve a high level of safety and security of radioactive sources that may pose a significant risk. The Code of Conduct includes guidance on general basic principles, legislation and the regulatory body with specific guidance on the import and export of radioactive sources.

EMERGENCY PREPAREDNESS

In 2017 FANR continued to expand its response capabilities in the event of a nuclear of radiological emergency.

EMERGENCY OPERATIONS CENTRE

In 2017 FANR's Emergency Operations Centre (EOC) was made fully operational, complete with state-of-the-art facilities, equipment and tools. The EOC consists of several rooms equipped with instruments and technologies that allow for the effective performance by and communication with the FANR Emergency Response Organisation (FERO) and others in case of a nuclear or radiological emergency. The facility was used during a number of practical training sessions throughout the year.

EXTERNAL EMERGENCY PREPAREDNESS EXERCISES

In October 2017 FANR participated in the emergency preparedness exercise conducted by Nawah Energy Company by assessing Nawah's on-site response, supporting the National Emergency and Crisis Management Authority (NCEMA) with the assessment of the off-site response and by activating its emergency response organisation. The International Atomic Energy Agency (IAEA) was invited to observe and comment on the exercise, and as a result, they provided observations on how to strengthen emergency preparedness and response arrangements in the UAE.

FANR also participated in all exercises organised by the IAEA under the emergency conventions (ConvEx) in 2017. During these activities, FANR simulated the activation of its FERO and responded by exercising its ability to provide advice to national entities, follow up on the licensees' actions, interact with the IAEA and stay in line with its roles and responsibilities at national and international levels. A highlight was the ConvEx-3 exercise where FANR coordinated the UAE participation among other 81 IAEA Member States and 11 international organisations.

INTERNAL TRAINING

In order to strengthen FERO capabilities to respond to nuclear or radiological emergencies, FANR organised two internal training courses on the general and functional areas of the FERO. Several training sessions were also conducted on other areas related to specific tools and technical areas including topics such as the FANR Emergency Management System (FEMS), crisis management, communication with the public, accident assessment, incident command system and other areas related to FERO.

ADHERING TO IAEA REQUIREMENTS

FANR coordinated with concerned entities to examine the current situation in the UAE in relation to the IAEA's requirements on emergency preparedness and response, and uploaded an initial draft to the IAEA's Emergency Preparedness and Response Information Management System (EPRIMS).

EMERGENCY PREPAREDNESS REVIEW (EPREV)

In 2017 FANR updated its Emergency Preparedness Review (EPREV) action plan in coordination with all concerned entities and cooperated with NCEMA to make arrangements to host a follow-up EPREV mission.

JOINT EMERGENCY RADIOLOGICAL MONITORING AND ASSESSMENT TEAM (JERMAT)

FANR continued to provide support to improve UAE arrangements for responding to nuclear emergencies at the Barakah Nuclear Power Plant for the areas related to radiation measurements and assessment for individuals and environment by coordinating the development of a Joint Emergency Radiological Monitoring and Assessment Team (JERMAT) operation plan with other concerned entities. The JERMAT plan unifies the recommendation of protective actions in case of nuclear events based on radiation measurable values. This plan will also be the basis for the development of the long-term plan for JERMAT.

FANR also provided support to develop a National Mechanism for Requesting Assistance from the IAEA (NMRAI) as a tool that allows UAE entities to arrange international assistance through the IAEA in case of a nuclear event at the Barakah Nuclear Power Plant. The mechanism was drafted, circulated and agreed among a number of entities under the coordination of FANR as National Competent Authority under the International Atomic Energy Agency Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency ratified by the United Arab Emirates in 1987. FANR is planning to test this mechanism in 2018 through a number of table-top exercises.

EMERGENCY PREPAREDNESS WORKSHOPS

In 2017 FANR conducted a number of workshops on criteria for protective actions in response to a nuclear or radiological emergency for concerned entities. During these workshops presentations on protective actions were introduced and (mocks) Nuclear table-top exercises were performed, with great results achieved. FANR is planning to conduct such activities to enhance the capabilities of the UAE to respond to a nuclear emergency at the Barakah Nuclear Power Plant as well as any radiological emergency.

INTERNATIONAL AND NATIONAL COLLABORATION

FANR has committed itself to not only meeting global standards and best practices by cooperating with international agencies, but to also ensure national cooperation with local stakeholders.

NATIONAL COLLABORATION

FANR works with stakeholders to effectively plan for and respond to opportunities and challenges of growth within the government sector.

In the course of 2017, FANR organised a number of meetings to further enhance FANR's relations with government entities, and signed two national memorandum of understanding (MoU's) with Khalifa University and the UAE Armed Forces.

In February 2017, FANR participated in a session during the World Government Summit held in Dubai entitled "The Future of Nuclear Energy and Technology in the Region and Globally". FANR also supported the implementation of government-mandated initiatives including the National Programme for Happiness and Positivity.

FANR reached out to its stakeholders including the general public and licensees to present regulatory information tailored to stakeholder needs. In 2017 FANR organised two 'Meet your Regulator' workshops, which aimed to build awareness about the nation's regulatory system among companies and organisations that use radiation technologies in their work. The 2017 sessions saw the attendance of more than 900 licensees.

RESEARCH AND DEVELOPMENT

The Federal Law by Decree no. 6 of 2009, Concerning the Peaceful Uses of Nuclear Energy, empowers FANR to carry out and support research and development (R&D) studies relevant to its scope of work and to initiate and coordinate safety related R&D work with other authorities.

In light of these provisions, FANR collaborated with firms of responsible nations aimed at developing R&D capabilities within its nuclear energy programme, as well as to use the operating experience of other countries on major safety issues.

Current collaboration activities in R&D include:

- Acquisition of the United States Nuclear Regulation Commission (U.S.NRC) safety analysis codes, and participation in U.S.NRC Code Applications and Maintenance Program (CAMP) and Cooperative Severe Accident Research Program (CSARP). Both agreements were renewed in 2017 for an additional five years.
- FANR is a member of the Organisation for Economic Co-operation and Development's (OECD) Nuclear Energy Agency (NEA) Halden Research Project. FANR participated in the Halden Board of Management meeting conducted in Paris in 2017 to discuss the programme proposal for the years 2018 to 2020, and is planning to partake in the proposed programme going forward.
- FANR is also a member in the OECD-NEA ATLAS project for the period of 2014 to 2017. The ATLAS programme is aimed at topics of high safety relevance for both existing and future nuclear power plants.
- FANR is one of the regulatory organisations providing support to ATLAS-2, a continuation of ATLAS project, and is planning to host a working group meeting for ATLAS-2 in Abu Dhabi in 2018.

COOPERATION ON KEY INFRASTRUCTURE AREAS

FANR collaborated with the French Institute of Radiation Protection and Nuclear Safety (IRSN) in research and development in the area of radiation protection. A technical seminar on dispersion models of radioactivity was held to initiate national level discussions on the dispersion models of radioactivity that could be used in the UAE. The seminar focused on the local specificities of the environment that could necessitate R&D actions in order to improve them.

FANR also collaborated with the French National Institute for Nuclear Science and Technology (INSTN) to train Emiratis nuclear professionals on safety culture, nuclear waste and its management, and the stages of the nuclear fuel cycle. The collaboration also encompassed educational tours in France to various nuclear power plant related facilities.

EXCHANGE OF VIEWS ON REGULATORY ACTIVITIES

In 2017 various international delegations visited FANR to exchange views on regulatory activities related to the nuclear energy programme including delegations from the UK Department of Environment, Food and Rural Affairs (DEFRA), the UK Centre for Environment, Fisheries and Aquaculture Science (CEFAS) and the Canadian Nuclear Safety Commission (CNSC).

PARTICIPATION AT INTERNATIONAL KEY CONFERENCES

In 2017 FANR participated in the following international conferences:

- **Regulatory Information Conference (RIC):** During RIC FANR conducted various meetings with senior management of U.S. Nuclear Regulatory Commission to exchange views on regulatory activities conducted by both organisations as well to discuss future cooperation in capacity building.
- **International Conference on the IAEA Technical Cooperation Programme:** FANR successfully participated in the programme along with other UAE entities. A first of the kind youth circle was led and hosted by FANR as a side event in the conference to discuss opportunities and challenges for developing youth capabilities in nuclear. The event attracted young professionals from different Member States who joined to share their experiences as young professionals in the nuclear sector.
- **61th IAEA General Conference (GC):** During this conference FANR conducted multiple bilateral meetings with senior IAEA officials including Yukiya Amano, the IAEA Director General, as well as senior officials from other nuclear regulators and organisations. The bilateral meetings focused on the ongoing licensing and oversight activities at the Barakah Nuclear Power Plant, as well as exchanging views on technical safety issues. Two new cooperation agreements were concluded during the conference the first with the UK Office for Nuclear Regulation and second one with the Canadian Nuclear Safety Commission. The new cooperation agreements focus on the exchange of technical information as well as capacity building.

COOPERATION WITH THE INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

FANR, through the UAE Permanent Mission, continue to work with the IAEA on the development of the nuclear energy infrastructure through the Technical Cooperation (TC) programme. The Technical Cooperation Programmes with the IAEA focuses on aspects related to nuclear infrastructure, waste management, and radiation protection.

As of 2017, FANR has been involved in five national projects jointly with the IAEA. These projects are:

- Establishing a secondary standards dosimetry laboratory to provide calibration services to UAE users of radiation measurement devices, which is in line with the most stringent international standards
- Establishing a national radioactive waste management infrastructure, including a national radioactive waste management strategy for the UAE
- Enhancing environmental monitoring capabilities to measure radioactivity in the air and around nuclear power plants
- Strengthening infrastructure for radiation, transport and waste safety in the UAE
- Supporting the development of national nuclear power infrastructure to back the sustainability of the UAE peaceful nuclear power programme

The following IAEA supported activities also took place in 2017:

- Inter-regional Training Course on Implementation of National Requirements for Nuclear Power Programme
- Expert mission to review FANR's process for operational readiness assessments needed for the Barakah Nuclear Power Plant's operating license decision
- Expert mission to review FANR's development of processes for nuclear safety oversight of the Barakah Nuclear Power Plant's operating reactors
- IAEA Education and Training Appraisal (EduTA) mission
- Expert mission on Leadership and Management for Safety and Safety Culture for the regulatory body
- Expert Mission on Secondary Standards Dosimetry Laboratory (SSDL)
- National outreach seminar on technical cooperation
- Workshop on service providers for Radiation Protection in the UAE
- Workshop on roles and responsibilities for qualified experts and radiation protection officers

FANR also took part in the Integrated Work Plan (IWP) review meeting conducted at the IAEA Headquarters in Vienna, Austria to update the plan for 2017 and 2018, and to discuss long-term collaboration between the IAEA and the UAE in the area of infrastructure building for a nuclear power programme. The IWP has been developed to identify priority activities based on the current status of the UAE nuclear power programme and is reviewed annually by IAEA officials and UAE stakeholders including FANR.

03

GOVERNANCE

FANR believes that good governance is critical in its continuous mission for excellence, and has implemented systems, processes and policies to ensure its success.

INTEGRATED MANAGEMENT SYSTEM

FANR operates in line with its Integrated Management System (IMS), which was established according to IAEA standards. The IMS enables FANR to implement its functions and responsibilities in a safe, effective and efficient way that is in line with the general policies set out by the Board of Management.

IAEA EXPERT MISSION

An IAEA expert mission on Leadership and Management for Safety and Safety Culture for the Regulatory Body was conducted in March 2017 to raise FANR staff awareness on the latest version of the IAEA Standard GS Part 2 Leadership and Management for Safety. The mission also presented key safety culture aspects, which is an important part of the integrated Safety, Security and Safeguards "3S" culture that FANR's senior management is committed to.

IMS MANUAL REV.5

The purpose of the IMS Manual is to communicate to FANR's employees, and to manage all work across the organization in order to achieve FANR's purposes. The IMS Manual applies to all activities carried out by FANR. The new revision of the IMS Manual (Revision 5) in 2017 adheres to IAEA General Safety Requirements GSR-Part 2 on Leadership and Management for Safety (2016), as well as ISO 9001: 2015 and ISO17025 for FANR laboratories. It also supports the UAE government drives with regard to innovation and happiness initiatives.

ISO 9001:2015

The ISO 9001:2015 Standard sets out the quality management principles endorsed by the International Standardization Organization (ISO). In 2017 FANR undertook a review of FANR's IMS and established a road map to achieve compliance with the ISO 9001:2015.

AUDIT AND RISK COMMITTEE

The Audit and Risk Committee helps FANR's Board of Management with matters relating to compliance with the highest standards of safety, security and safeguards, and the integrity of its reporting processes.

AUDIT & RISK COMMITTEE MEETINGS

The Audit and Risk Committee met three times in 2017. Members allocated tasks, provided recommendations, and took decisions pertaining to various concerns raised by FANR's senior management. In 2017 the Audit and Risk Committee had assigned 22 actions for Internal Audit Department and FANR management to implement in order to enhance and improve various facets of the organisation.

Initiatives that were proposed by the Audit and Risk Committee and implemented by FANR management in 2017 included the following:

- Review of the management's analysis on the approaches to integration with the federal financial system and make recommendations to the Board of Management on the approach to be followed by FANR
- Ensure that FANR management was on track to meet Value Added Tax (VAT) registration deadlines and that it is capable of meeting VAT requirements in the future
- Review and provide input on the progress updates pertaining to the organisational effectiveness and efficiency review project that is aimed to strengthen FANR organisation structure in support of its future vision
- Review the Technical Support Organisation (TSO) strategy to ensure FANR has the right competencies and business model to manage future workload and determine outsourcing requirements

OVERSIGHT AND COOPERATION

In 2017 the Risk and Audit Committee supported the FANR Internal Audit Department by reviewing the 2017 Risk Assessment results and approving the 2017 risk-based Internal Audit Plan.

As the primary point of contact for liaison with the State Audit Institute (SAI), the Audit and Risk Committee reviewed the report on FANR by the State Audit Institute for the year 2016, and responded to the observations identified within the report.

The Committee also provided guidance, oversight and direction to FANR management and the external auditors in support of closure and issuance of formal financial statements for the year ending 31st December 2016.

INTERNAL AUDIT

Internal Audit (IA) is an independent department established to add value to and improve FANR's operations by bringing a systematic, disciplined approach to FANR's risk management, control and governance processes.

WORKING ON ACHIEVING FANR'S OBJECTIVES

In 2017 Internal Audit accomplished the following:

- Formalised internal audit processes, procedures and manual by tailoring best practices in the global and regional internal audit practices to suit FANR's business requirements
- Developed a fresh approach to conduct an annual entity-wide internal audit risk assessment that is in line with the internal audit methodology
- Completed and reported the results of four audits in 2017 based on the approved Annual Risk-based Internal Audit Plan
- Conducted two follow-up reviews on agreed management action plans for the enhancement of the internal control
- Conducted an entity-wide risk assessment, which covered 12 departments and corporate governance, and identified the top 10 risks across FANR

RADIATION PROTECTION COMMITTEE

The Radiation Protection Committee was established by a decision of the FANR Board of Management on the basis of Article (67) of the Federal Law by Decree No 6 of 2009, Concerning the Peaceful Uses of Nuclear Energy.

NATIONAL WORKSHOPS

In 2017 the Radiation Protection Committee hosted two national workshops with the support of IAEA experts. The first on Service Providers for Radiation Protection in the UAE, which provided guidance about radiation protection requirements to service providers operating in nuclear, medical and industrial fields. The second was on the Roles and Responsibilities for Qualified Experts and Radiation Protection Officers in the UAE which aimed at clarifying the duties of radiation protection professionals.

WORKING GROUPS

The Radiation Protection Committee created four working groups in 2017:

- **Medical Application Working Group**
  The scope of the Medical Application Working Group is to implement the National Programme, which was created in 2016 for radiation safety in medical applications. In 2017 the working group established the initial Dose Reference Levels (DRLs) to be adopted by all healthcare facilities in the UAE in order to optimise the patient dose, thus keeping the country in line with the best practices around the world. Data collection for the national DRLs was also started in coordination with the country health authorities. Furthermore, the working group drafted the National Guidelines for Quality Control standards.
- **Orphan Source Working Group**
  The scope of the Orphan Source Working Group is to implement the Orphan Source Strategy, which was developed and approved in 2015. The working group established guidelines for the management of border monitoring events. These guidelines will enhance capabilities of personnel at ports and other customs authorities encouraging the development of dedicated procedures to respond to different incidents and emergency events.
- **National Strategy for Education and Training in Radiation Protection Working Group**
  The scope of the National Strategy for Education and Training in Radiation Protection Working Group is to streamline efforts and initiatives in the educational and vocational sectors in the UAE by implementing the IAEA guidance related to professionals involved in radiation protection. In 2017 the working group drafted a proposal for the UAE national Strategy for education and training in this field, assessed the current status of education and training and looked at future needs in radiation protection. The group also developed proposals for temporary recognition criteria for qualified experts in the UAE, and a scheme for qualification of Radiation Protection Officers through the accreditation of training service providers in collaboration with the National Qualifications Authority (NQA).

- **National Environmental Radiation Protection Working Group**
  The scope of the National Environmental Radiation Protection Workgroup Group is to support the management of existing exposure situations, and to enhance the national infrastructure and capabilities in the area of environment radioactivity measurements and radiation protection. The working group will also develop future projects for environmental monitoring such as indoor radon mapping of the UAE.

THE INTERNATIONAL ADVISORY GROUP (IAG)

The International Advisory Group is a group of international experts in areas related to nuclear safety regulation. Its mission is to advise FANR's Board of Management on a variety of technical and policy matters to ensure that FANR continues to maintain an effective and predictable regulatory approach that conforms to International Atomic Energy Agency (IAEA) safety standards and best international practices. During the year the International Advisory Group made recommendations in areas related to licensing of the Barakah Nuclear Power Plant on the transition from licensing to operational oversight. The International Advisory Group also has had discussions on the long-term sustainability of the FANR nuclear regulatory regime.

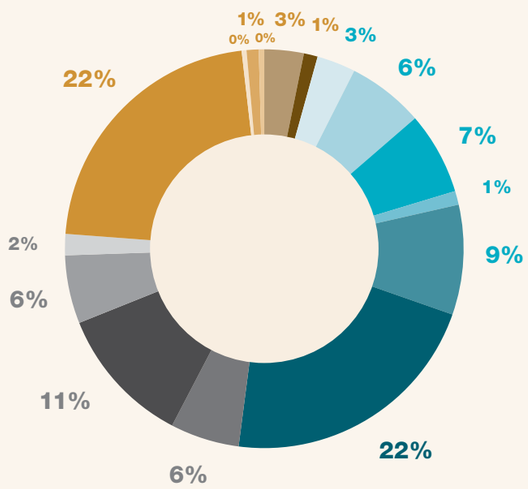
FINANCIAL REPORTING

TOTAL EXPENDITURE:
AED 273.9 MILLION

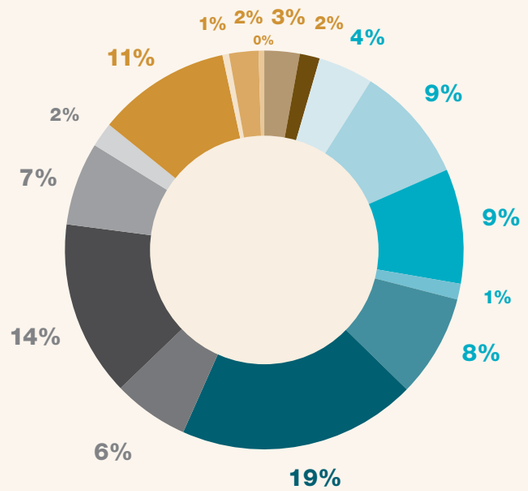
TOTAL EXPENDITURE 2016-2017

DEPARTMENT	2016 EXPENDITURES	2017 EXPENDITURES
Director General's Office	9,033,041.51	7,841,302.11
Legal Affairs Department	3,174,805.47	4,458,804.14
Government Communications Department	8,889,371.78	12,218,575.99
Human Resources Department	17,529,202.11	25,922,556.81
Information Communication & Technology Department	18,907,540.48	25,486,320.86
Deputy Director General for Operations	3,161,381.51	3,502,257.88
Education & Training Department	25,192,772.31	22,807,168.60
Nuclear Safety Department	61,402,750.17	52,973,523.45
Nuclear Security Department	15,832,768.10	16,847,223.56
Radiation Safety Department	31,917,956.36	39,009,871.69
Safeguards Department	15,660,660.55	18,478,760.48
Finance & Control Department	4,873,901.12	5,484,405.25
Supply Chain & General Services Department	62,218,934.11	29,639,075.33
Internal Audit Department	1,124,500.00	1,451,983.64
Corporate Development Department	2,764,179.97	6,526,928.96
Deputy Director General Administration	1,259,640.79	1,256,393.85
GRAND TOTAL (AED)	**282,943,406.34**	**273,905,152.60**

FANR EXPENDITURES 2016



FANR EXPENDITURES 2017



- NUCLEAR SAFETY DEPARTMENT
- EDUCATION & TRAINING DEPARTMENT
- DEPUTY DIRECTOR GENERAL OPERATION
- INFORMATION COMMUNICATION & TECHNOLOGY DEPARTMENT
- HUMAN RESOURCES DEPARTMENT
- GOVERNMENT COMMUNICATION DEPARTMENT
- SUPPLY CHAIN & GENERAL SERVICE DEPARTMENT
- INTERNAL AUDIT DEPARTMENT
- CORPORATE DEVELOPMENT DEPARTMENT
- DEPUTY DIRECTOR GENERAL ADMINISTRATION
- LEGAL AFFAIRS DEPARTMENT
- DIRECTOR GENERAL'S OFFICE
- NUCLEAR SECURITY DEPARTMENT
- RADIATION SAFETY DEPARTMENT
- SAFEGUARDS DEPARTMENT
- FINANCE & CONTROL DEPARTMENT

STRATEGIC GOALS AND PERFORMANCE

FANR's five-year strategic plan is designed to support its vision to be globally recognised as a leading nuclear regulator.

2017-2021 STRATEGIC GOALS

FANR set the following strategic goals for itself from 2017 to 2021 and it monitors the progress of the first year. Those goals are:

- Ensure the peaceful, safe and secure use of nuclear energy and radiation sources
- Develop sustainability of the UAE regulatory infrastructure
- Ensure the provision of all administrative services in accordance with quality, efficiency and transparency standards
- Establish an innovation culture within its work environment

PERFORMANCE MONITORING FRAMEWORK

FANR has introduced a performance monitoring framework to monitor its progress against the five-year strategic plan

04

FANR is dedicated to optimising the skills, processes and resources needed for it to excel and realise its vision of being globally recognised as a leading nuclear regulator.

CAPACITY BUILDING

EMIRATISATION

FANR's capacity building efforts includes the steadfast support of the government's Emiratisation initiative. FANR aims to develop and employ Emiratis in a meaningful and efficient manner in the nuclear regulatory field.

DEDICATED TO DEVELOPING EMIRATIS

Long-term career opportunities for Emirati employees at FANR are achieved through focused recruitment, training and development programmes. In 2017 FANR'S total workforce was 222 employees, 64% of which are Emirati. FANR continues to attract talented individuals to meet its business requirements and 20 new Emiratis were recruited in 2017.

EXCELLING IN TRAINING AND DEVELOPMENT

Through its educational and vocational programmes, FANR conducted various training and development initiatives in 2017.

LEADERSHIP AND MANAGEMENT DEVELOPMENT PROGRAMME

The programme establishes a platform for FANR employees to become better leaders and contributors within FANR as well as valuable contributors to FANR's broader regulatory and transparency goals. In 2017 two FANR staff members were enrolled in the Prime Minister's Office Leadership Programme with a focus on developing FANR's future leadership talent.

FANR SCHOLARSHIP PROGRAMME

In order to develop its qualification portfolio, FANR awards scholarships to Emirati employees to complete tertiary qualifications at leading institutions, such as Khalifa University, Zayed University, the Korea Institute of Nuclear Safety (KINS) and the Korea Advanced Institute of Science and Technology (KAIST). In 2017 three Emirati employees continued their Bachelor's Degrees at Khalifa University, one employee continued his PhD degree at Khalifa University, two employees completed their Master's degrees at Khalifa University and one employee completed his Masters of Science Degree at Manchester University.

FANR INTERNSHIP PROGRAMME

The FANR Internship Programme offers interns the platform to discover life as a future FANR employee. In 2017 four students entered and successfully completed their internship in the Operations and Administration Divisions. Their extensive six-week job rotation provided insight into the main responsibilities and functions of the respective division's departments.

COMPETENCY DEVELOPMENT FRAMEWORK

This competency development framework is the foundation for continuously and consistently ensuring a highly competent workforce at FANR. In 2017 progress was made in developing a competency framework for each of the four departments in the Operations Division as well as all the departments under the Administration Division. This included a competency-based job profile for each job position using the IAEA Systematic Assessment of the Regulatory Competence Need (SARCoN) Methodology as the basis to develop each individual job profile.

DEVELOPEE ENGINEERS PROGRAMME

The Developee Engineers Programme is designed to provide fresh Emirati engineering graduates with the fundamental knowledge necessary to understand technical concepts applicable to nuclear engineering and regulation. In 2017, the second year of the programme, there were 17 newly graduated engineers successfully completing their development programme and being permanently placed in one of the four operations departments of the Operations Division as engineers.

INTERNAL TRAINING PROGRAMME

In 2017 a total of 1444 internal and external training events were conducted for FANR employees of which 73% were conducted at FANR's training facilities. This included technical and nontechnical training provided by expatriate employees and UAE nationals Emirati. A total of 67% of the training opportunities were provided to mid-career level employees.

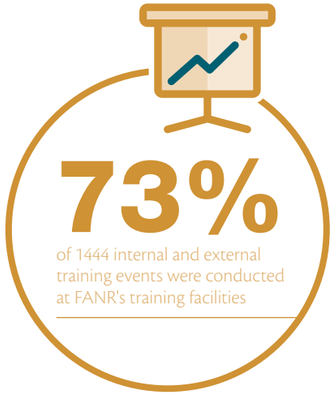
INSPECTOR QUALIFICATION PROGRAMME

In 2017 there were 30 new inspectors qualified from the programme to carry out inspections at nuclear and industrial facilities in the UAE. The qualification follows a rigid programme including initial training topics, an inspector job shadowing programme and Ministry of Justice training in order to be authorised as judicial officers.

Every three years an inspector is required to participate in re-qualification training to renew their inspector card. In 2017 FANR re-qualified 27 inspectors in the areas of nuclear and radiation safety, safeguards and security.

INTERNATIONAL COLLABORATION SUPPORTING EDUCATION & TRAINING

In accordance with the framework agreement with the IRSN (the French public authority for nuclear and radiological safety), FANR collaborated on research and development in the field of aquatic dispersion modelling and with the French National Institute for Nuclear Science and Technology (INSTN) concerning education and training. In 2017, FANR successfully collaborated with the INSTN to develop and conduct nuclear fundamentals training to 12 FANR employees over a period of one week, and conduct an extensive study tour for eight Emirati employees to French nuclear and industrial facilities.



KNOWLEDGE MANAGEMENT

FANR recognised the value of preserving and applying critical knowledge as a national asset, and as such implemented the Knowledge Management (KM) Programme to enhance its intellectual capital.

FANR staff conducted knowledge awareness sessions and introduced new knowledge management methods, techniques, processes and procedures. FANR management and staff are aware of the importance of the knowledge sharing culture and accordingly more support is provided for knowledge management.

In 2017 FANR continued the integration of organization knowledge into management processes and procedures through two methods. First is the integration of knowledge identification and knowledge maintaining into the Integrated Management System (IMS) processes and procedures and the second through introducing Knowledge Resource Matrix. Number of Knowledge Matrixes were developed, describing the knowledge base (Human, Structure- and Relationship Capital) in order to contribute in the development and implementation of the process itself and in the personal development.

The integration of the FANR information technology tools and applications are helping the staff to find the right knowledge at the right time. FANR portal has a new service which facilitates sharing of operating experience, feedback and reports as part of internal collaboration efforts to increase FANR employees' knowledge and awareness about different nuclear related events and its root causes.

Identification of the critical knowledge holders and transfer the knowledge from experts to Emiratis continued in 2017. Senior experts who left FANR have transferred their work related knowledge to their colleagues or to their supervisors. FANR has established methods and tools to prevent the loss of critical knowledge and these methods are continuously assessed for improvement opportunity.

FANR regularly participates in networks related to Knowledge Management activities such as the Global Nuclear Safety and Security Network (GNSSN), Network for Education in Nuclear Technology (ANENT). FANR shares its experience and good practices in knowledge management with other nuclear organisations.

FANR CULTURE AND POSITIVITY

MISSION FOR EXCELLENCE

In 2017 FANR conducted a successful "excellence journey" staff retreat to introduce its Excellence System and better prepare staff for participation in future government excellence awards such as the H.H. Sheikh Mohammed bin Rashid Government Excellence Award. The staff and management retreat included a variety of activities aimed to raise employees' engagement and collaboration skills as well as promote a positive working environment.

FANR EMPLOYEES AWARD SCHEME

The FANR Employees Award Scheme was developed, approved by the Board of Management and introduced to all FANR staff in 2017. The project will be implemented officially at the beginning of 2018. The scheme is based on best practice methods implemented by the UAE government.

THE HAPPINESS PROGRAMME

FANR's Happiness Programme was launched in early 2017 as part of the National Programme for Happiness and Positivity. The programme aimed to introduce new initiatives and corporate policies to increase the level of happiness and satisfaction amidst FANR employees with regard to their working environment.

Some of the initiatives introduced included 'Casual Thursday' which provided an opportunity for staff to dress casually once a week. Then there was the 'Work from Anywhere' initiative that gave employees the flexibility to choose their most productive environment, as well as 'Breakfast with the DG', a monthly breakfast with FANR's Director General for a small group of employees in a casual setting.

FANR is dedicated to implementing a positive company culture that encourages innovation, excellence and success, and enhances the well-being of all its employees.

A volunteering initiative, 'Give Back, was also introduced as part of the programme. The 'Give Back' initiative invited employees with competencies in areas like languages, special skills or even hobbies to give classes to their colleagues and mentor them in these skills. In 2017 FANR employees gave classes in French, Spanish, German and Arabic as well as a special class on tea-making.

A calendar of internal engagement events was also introduced, which allowed staff to connect socially and engage with their colleagues. Events in 2017 included:

- FANR's Sports Championship 2017
- The Ramadan Football Tournament
- Iftar Night
- Emirati Women's Day
- Movie Night
- International Day of Happiness event
- A 5km marathon

EXCELLING INTO THE FUTURE

FANR is focused on attaining the mission mandated to it by the UAE government by continuously achieving excellence, both now and in the future.

2017 has seen FANR excel in its core functions of ensuring safety, security and safeguards, as well as education and training. Looking to the future the focus will be on its principal goal to ensure the peaceful, safe and secure use of nuclear and radiation sources.

FANR's journey to excellence is on going as it works towards ensuring a safe, secure and peaceful nuclear energy programme that promises a brighter future for the UAE and its people.