



## **International Atomic Energy Agency**

### ***Technical Working Group on Nuclear Power Plant Operations (TWG-NPPOPS)***

## **TERMS OF REFERENCE**

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The Technical Working Group on Nuclear Power Plant Operations (TWG-NPPOPS) is a group of executives and leaders with responsibilities for operation of nuclear power plants (NPPs) to provide advice and support programme implementation, in the area of managing and strategizing sustainable NPP operations by reflecting a global network of excellence and expertise of leadership.

### **I. OBJECTIVE**

The objective of the TWG on Nuclear Power Plant Operations is to be a continuous mechanism to focus and organize IAEA activities for support of managing safety and sustainability of nuclear power generation by:

- Providing guidance to the IAEA on vision, strategy, programme and procedures for NPP operations;
- Assisting the IAEA in evaluation of requests from owner/operating organizations in the Member States;
- Supporting assessment of feedback received on the use of IAEA tools for information dissemination, e.g. publications, support activities, missions, expert views;
- Providing advice on focusing and arranging IAEA actions and approaches based on the needs and challenges of NPP operations;

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- Collecting and sharing information on developments, activities and good practices in the NPPs of Member States, including efforts by NPP owner/operating organizations, international and regional operator and industry associations and technical and research support organizations.

## II. SCOPE

The scope of the TWG-NPPOPS will focus on operating (or about to be operating) NPPs and will include, but not limited to, the following aspects of NPP operation and maintenance:

- Plant safety
- Plant performance and health
- Maintenance, refurbishment, upgrade, modernization of assets (including human assets)
- Outage and operation management (including fuel and radioactive waste)
- Organizational culture and management of safety and performance
- Efficient, advance and innovative NPP programmes, processes and procedures
- Enhancement of robustness, resiliency and compliance after major events
- Direction of strategic or functional leadership

## III. FUNCTIONS

The functions of the TWG on Nuclear Power Plant Operations are:

- a) To identify current and future challenges (legislative, economic, technical, organizational and administrative) to nuclear energy and electricity generation;
- b) To explore, organize and harmonize solutions to current and foreseen challenges and issues of management of NPP operation and maintenance in timely manner;
- c) To provide advice and guidance, and to marshal support in their countries for implementation of the Agency's programmatic activities in the area of NPP operation and maintenance;
- d) To provide a forum for information and knowledge sharing on national and international programme development in the area of NPP operation and maintenance;
- e) To act as a link between the Agency's activities in specific area and national scientific communities, international and regional operator and industry associations, technology owners and research and development organizations, as appropriate;
- f) To provide advice on preparatory actions in Member States and the Agency's activities in planning and implementing coordinated research programmes, collaborative assessments and other activities as well as the review of the results of those;
- g) To develop and/or review selected documents from the Nuclear Energy Series, assess existing gaps and advise on preparation of new ones, in the scope of their field of activity;
- h) To identify important topics for discussion at Standing Advisory Group on Nuclear Energy (SAGNE) and contribute to status reports, technical meetings and topical conferences in the field of NPP operation and maintenance;

- i) To encourage participation of owner/operator organization executives and leaders, as well as senior managers with responsibilities for operations, engineering, maintenance and special projects departments, in Agency activities;
- j) To propose methods for anchoring of future IAEA activities in support of addressing challenges in the management of safety, sustainability and viability of NPP operations, as well as for disseminating useful, objective and reliable information on solutions and good practices to the operating NPPs in Member States.

#### **IV. MEMBERSHIP**

Members of the TWG on Nuclear Power Plant Operations shall be appointed by the Deputy Director General of the Department of Nuclear Energy (DDG–NE), following consultations with the respective national authorities or organizations of the Member States with operating (or about to be operating) NPPs.

The total membership of the TWG on Nuclear Power Plant Operations shall not exceed 30 members<sup>1</sup>.

Members of the TWG on Nuclear Power Plant Operations:

- Shall be recognized executives and leaders with responsibilities for operation and maintenance, engineering and technical support and special projects within nuclear industry, including but not limited to, owner/operating organizations; international and regional operator industry associations and technical and research support organizations; international/multi-national organizations; or technology owners' groups;
- Are to serve for a standard length of four years;
- Shall participate in the Group in their personal capacity and shall provide as appropriate views on national and organizational policies and strategies;
- May, as appropriate, bring experts to provide additional information and share experience in the meetings.

#### **V. CHAIRMANSHIP**

The Chairman of the TWG on Nuclear Power Plant Operations shall be selected from the members of the TWG by the DDG–NE.

#### **VI. SECRETARIAT AND ADMINISTRATIVE AND TECHNICAL SUPPORT**

Within available resources, the DDG–NE will provide for administrative and secretariat services required by the TWG on Nuclear Power Plant Operations, including meeting facilities, maintenance of records and distribution of documents.

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<sup>1</sup> The Deputy Director General of the Department of Nuclear Energy (DDG–NE) may from time to time also co-opt additional members and/or invite observers from other Member States and international or regional organizations on an ad-hoc or continuing basis.

The IAEA shall provide the services of a scientific secretary. Support, when required, will be provided by managers/staff from Department of Nuclear Energy (NE), or other relevant departments.

## **VII. METHODS OF WORK AND DELIVERABLES**

Except as otherwise herein stated, the TWG on Nuclear Power Plant Operations will determine its own methods of work, including preparation of its Agenda, establishment of special groups, keeping of records and other procedures, and shall report on its findings to SAGNE.

The activity of the TWG on Nuclear Power Plant Operations between periodic meetings shall be coordinated by the Scientific Secretary taking into due consideration the relevant recommendations of the TWG and SAGNE.

Following each meeting, the TWG on Nuclear Power Plant Operations shall provide the Deputy Director General, Head of the Department of Nuclear Energy with a report on its achievements and recommendations. The report shall also be published on the Internet in a format and content agreeable to all members.

The Chairman of the TWG on Nuclear Power Plant Operations shall communicate to SAGNE recommendations for strategic development or other important topics to be discussed at SAGNE meetings.

The TWG on Nuclear Power Plant Operations will also interact, as applicable, with other IAEA advisory groups, national, regional and international organizations.

## **VIII. MEETINGS**

The TWG on Nuclear Power Plant Operations will meet at regular intervals but no more than once in a year with each meeting lasting no longer than two working days.

Non-scheduled meetings may be called by the DDG-NE or the Chairman if required by extraordinary issues or circumstances.

Meetings will be conducted in English only.

## **IX. COSTS**

The IAEA is not in a position to bear the travel and other costs of members to the regular and extraordinary meetings of the TWG on Nuclear Power Plant Operations. All costs involved in the participation of each member, including travel and per diem expenses, shall in general be supported by the nominating Member State/Organization.

However, the IAEA may contribute to the cost of attendance of members from developing countries, if sufficient funds are available and if a significant contribution can be made to the meeting by the respective members.

**COLLECTION OF SUPPORTING INFORMATION**

## **DRIVERS FOR A TWG OF INDUSTRY EXECUTIVES ON NPP OPERATIONS**

- In the last two years, General Conference (GC) resolutions and recommendations from advisory bodies have recommended strengthening its assistance to the *operating* NPPs.
- The SAGNE has recommended, in its 2016 report to the DG, to “*provide a platform to foster peer-to-peer networking and collaboration for high level managers in NPP operating organisations to share the management challenges and leadership issues to enhance safety and improve performance.*”
- The SAGNE, in the report to the DG at the of 25-28 April 2017, acknowledged the initiative to establish the TWG on NPP operations with executive level membership to focus the Agency’s assistance on operating NPPs. Renewing its earlier recommendation from the SAGNE VI (Meeting 1), the SAGNE encouraged the Agency: “*to expedite the finalization of the proposal for this TWG while considering interfaces with other TWGs on common topics, such as plant life management and instrumentation and control, as well as complementary activities related to NPP operation and experience.*”
- The industry leaders and executives, at the IAEA TM on 6–9 September 2016, recommended to the IAEA to establish a TWG on reliable and efficient NPP operations as a mechanism to inform the IAEA Secretariat of challenges in operation and maintenance of NPPs and to suggest effective mechanisms to assist in timely resolution of those and harmonize policy and practices.
- In the meeting with the NE-DDG on 9 September 2016 (present: Mr N. Wilmhurst, CNO of EPRI and chair of the TM, Mr E. Bradley, NE Coordinator, Mr P. Vincze, NPES-SH, Mr A. Kilic, NPES scientific secretary of TM) appropriateness and the initiation process for TWG were agreed.

**Therefore, establishment of a TWG on NPP operations with executive level membership was deemed to be essential, with the understanding of:**

- For timely and effective IAEA assistance to the operating NPPs — as well as using the IAEA resources efficiently — it is necessary to provide a common platform for leaders of owner/operator organizations to reflect their needs and challenges to the IAEA.
- This is in order to maintain and sustain the nuclear energy contribution in the energy mix, particularly to meet Member States’ climate change targets by ensuring safe, reliable and efficient operation of existing NPPs, as foreseen by leaders and executives of NPPs.

## **RATIONAL FOR FUNCTIONS OF A TWG OF INDUSTRY EXECUTIVES ON NPP OPERATIONS**

***Main Expected Outcome: Using IAEA Resources Efficiently for a Focused, Timely and Effective Assistance to the Operating NPPs***

- It is necessary to maintain and operate existing NPPs with current technologies safely, reliably and efficiently for longer terms to meet energy needs and contribute to the curbing climate change:
  - In recent years, a number of NPPs have been shut down (or are planned to be shut down) earlier than their remaining licensed lifetime by their owner/operator organization mostly due to economic factors (and some closures were attributed to technical aspects);
  - More than 80% of operating NPPs have been in service for more than 30 years. The ageing fleet is needed to bridge the gap between the existing and the next generation of NPPs.
  
- The IAEA has the largest global role and influence in collection and dissemination of knowledge and expertise, in harmonization of activities and provision of a common platform:
  - The IAEA perceived by the public and the governments of the Member States as unbiased, reliable, objective and authoritative source;
  - The IAEA has the largest membership of all international organizations and objectively capable of balancing the policies on promotion and regulation of NPPs;
  - The IAEA is the only international organization that interfaces — and is able to harmonize activities of — government authorities, regulatory bodies, owner/operator organizations, responsible designers in the largest amount of countries;
  - The IAEA is only organization activities of which covers cradle-to-grave of NPP lifecycle.
  
- For timely and effective IAEA assistance to the operating NPPs as well as using the IAEA resources efficiently, it is necessary to provide a common platform for leaders of owner/operator organizations to reflect their needs and challenges to the IAEA:
  - The SAGNE has recommended, in its 2016 report to the DG, to “provide a platform to foster peer-to-peer networking and collaboration for high level managers in NPP operating organisations to share the management challenges and leadership issues to enhance safety and improve performance.”
  - The industry leaders and executives, at the IAEA TM, recommended to the IAEA to establish a TWG on reliable and efficient NPP operations as a mechanism to inform the IAEA Secretariat of challenges in operation and maintenance of NPPs and to suggest effective mechanisms to assist in timely resolution of those.

**Therefore, a Technical Working Group (TWG) is important to have functions for:**

- *Collecting, understanding and evaluating operating NPP issues (legislatively, economically and technically);*
- *Assisting in exploration, organization and harmonization of solutions to those in timely and prioritized manner;*

***Disseminating useful, objective and reliable information on solutions and good practices to the operating NPPs in Member States.***