



MDEP HPR1000 WG Programme Plan 2023-2024

Related to: HPR1000 Working Group Activities

HPR1000 WG Programme Plan for 2023 and 2024

**Multi-National Design Evaluation Programme
HPR1000 Working Group (HPR1000WG)**

1. HPR1000WG Goals

- Leverage national regulatory resources by sharing information and experience on the regulatory safety design reviews of the HPR1000 with the purposes of enhancing the safety of the design and enabling regulators to make timely licensing decisions to ensure safe designs:
 - Exchange experience on licensing process and design reviews, lessons learnt, and design-related construction, commissioning, and operating experience
 - Work to understand the differences in regulatory safety review approaches in each country to support potential use of other regulators safety design evaluations, where appropriate
 - Look for opportunities to provide input to issue-specific working groups on potential topics of significant interest
- Promote safety and standardisation of designs through cooperation (consideration should be given to promoting harmonisation of regulatory practices where there may be a safety benefit):
 - Identify and understand key design differences including those originating from regulatory requirements and then documenting the reasons for differences in regulatory requirements
 - Document common positions on aspects of the review to enhance safety and standardisation of designs
 - Coordinate communications on MDEP views and communicate common positions to vendor and operators regarding the basis of safety evaluations and standardisation
 - Use experience gained in learning about similarities and differences in licensing frameworks to identify potential paths forward to harmonise licensing approaches and practices when there is a safety benefit

2. Intermediate Objectives

- Share information including evaluations among HPR1000WG members to leverage resources and focus design reviews on safety issues including Fukushima-related issues and commissioning activities in regulatory areas that are significant for licensing decisions
- Encourage improvement of designs through design safety review cooperation when there is a clear safety benefit

- Enhance multilateral cooperation in licensing frameworks to harmonise licensing approaches and practices when there is a safety benefit
- Document the activities of the technical expert subgroups through technical reports and common positions

3. 2019 - 2021 MDEP HPR1000WG Work Plan

- Communicate review results and timelines for sharing regulatory evaluations of the HPR1000 among all HPR1000 WG member countries
- The following technical topics will be discussed in 2019 - 2021:
 1. Fukushima accident lessons learnt,
 2. Severe Accidents,
 3. Unique design features affecting safety, and
 4. Treatment of external and internal events
 5. First Plant Only Tests (FPOT)
- Following additional discussions on the topics above, two HPR1000 technical expert subgroups (TESG) have been established.
 - Severe Accidents (SA) TESG
 - Internal and External Hazards TESG
- These TESGs should perform the following:
 - The technical expert subgroups should provide a work plan including description and scope of issues to be addressed to the HPR1000WG and report on the status at every HPR1000WG meeting
 - Meet regularly to exchange information on relevant aspects of the design review status
 - Share relevant evaluations when they become available
 - Produce technical expert subgroup technical reports on subjects that the subgroup deems important to safety to identify and document similarities and differences among designs, regulatory safety review approaches and resulting evaluations
 - Produce MDEP common positions, especially on important safety evaluation findings
 - Post evaluations, positions, reports, etc. in the MDEP library
- Follow the construction and commissioning progress of HPR1000
 - Share significant design changes, if any, in construction and commissioning
 - Provide feedback on construction and commissioning experience

- When necessary, plan and conduct design-related technical site visits or inspections to ensure adequate design configuration control, quality assurance, and acceptability of structures, systems, and components of the HPR1000 (appropriate coordination with VICWG)
- Provide recommendations, when appropriate, to the STC for considering possible items as topics to address generically

4. Outputs of the HPR1000 WG during 2019 -2024

- Develop the following Common Positions (CP)
 1. HPR1000 CP on Fukushima Lessons Learnt; incorporating the STC statement on the Vienna Declaration (2019-2020) - COMPLETED
 2. HPR1000 CP on Post-loss of coolant accident (LOCA) Strainer Performance and Debris in-Vessel Downstream Effects (20-2021) - COMPLETED
 3. HPR1000 CP on the Vienna Declaration (2020-2022) - DRAFTED
- Develop the following technical reports (TR)
 1. Complete HPR1000 Survey on Hydrogen Management (2019) - COMPLETED
 2. Draft HPR1000 TR on Hydrogen Management (2020) - COMPLETED
 3. SA TSEG TR on Severe Accidents Analysis- COMPLETED
 4. SA TSEG TR on In-Vessel Retention - COMPLETED
 5. Hazards TSEG TR on Internal and External Hazards- COMPLETED
- Investigate the potential of the new activity for Supply Chain
- Investigate the potential of the new activity for the PSA application
- Develop a HPR1000WG work programme for the accident analysis topic
- Workshop with industry in 2024
- Complete table on similarities and differences among HPR1000 designs, as appropriate (2019)
- Agreement on work programme for SA TSEG (2019) - COMPLETED
- Agreement on work programme for TSEG for Internal and External Hazards (2019) - COMPLETED
- Contribute to the MDEP 2023 Annual Report
- Contribute to the programme for the 5th MDEP conference in 2023
- Share lessons learnt from design reviews and design issues faced during HPR1000 construction and commissioning
- Recommendations and inputs to other MDEP working groups regarding potential generic issues and harmonisation opportunities (coordination with CNRA WGDIC and WGCS, VICWG, or the EPRWG, AP1000WG, APR1400WG, and VVERWG, as appropriate)

5. Key Stakeholders with whom the HPR1000 WG members will interact

- Hualong Pressurized Water Reactor Technology Co. LTD

- Bradwell B Generation Company (BRB GenCo), General Nuclear System (GNS)
- Nucleo Electrica Argentina S.A. (NA-SA)
- Other MDEP regulators as needed (care shall be taken NOT to share proprietary or sensitive info inappropriately)
- Non-MDEP regulators, as appropriate
- CNRA/WGRNR/WGDIC
- HPR1000 Utilities/Licensees/Operators
- Other Groups, as appropriate, to further MDEP goals (IAEA, TSO, etc)