Role of SNSA's Inspection in Strengthening Operational Safety at Krško NPP

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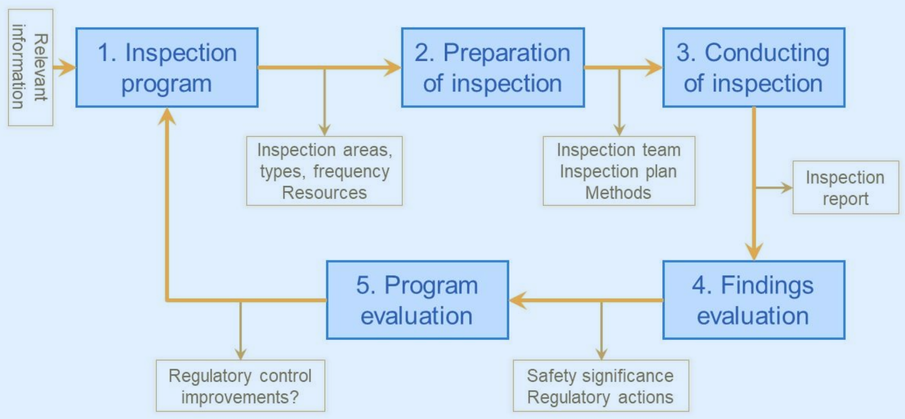
The Slovenian Nuclear Safety Administration (SNSA) team of only three nuclear inspectors effectively inspect all operational areas of the only Slovenian NPP Krško, but focus is on safety important areas and ones with less performance. For such small inspection team, it is a major challenge to carry out in-depth, detailed and comprehensive inspections. This requires excellent organisation and continuous optimisation of the process, as well as use of external support for larger inspections.

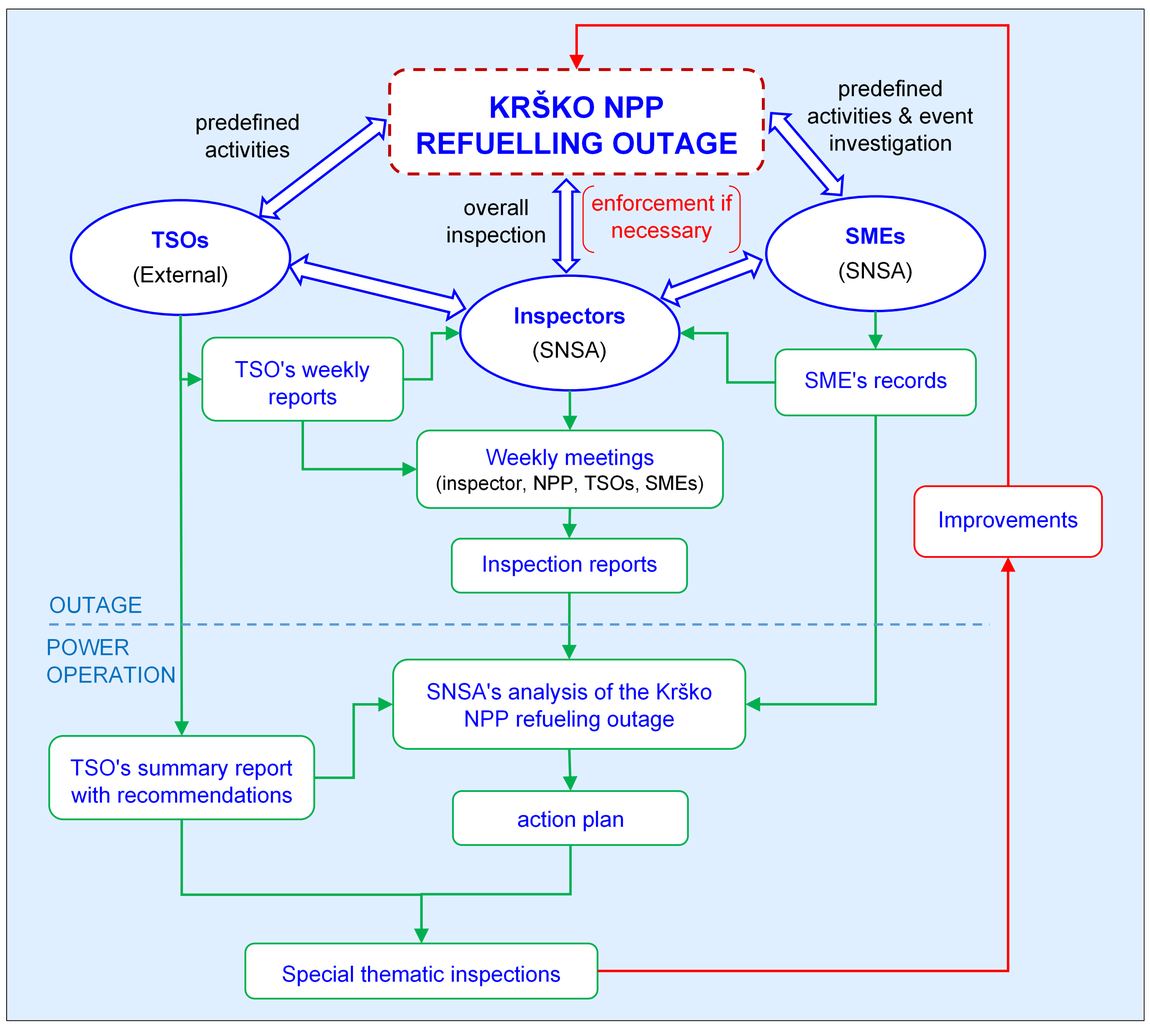
The SNSA's inspection process

- all areas of NPP operation are included, but focus on safety important and ones with less performance
- inspections in accordance with annual and baseline (3-year) inspection plan
- no need for resident inspector except during the refuelling outages and inspection of large-scale activities
- improvement and optimisation of the inspection process is a continuous process



Krško NPP refuelling outages inspections

- continuous presence of the SNSA's inspectors
- topical visits of the SNSA's subject matter experts (SMEs)
- independent supervision carried out by the authorised technical supporting organisations (TSOs)
- the SMEs and TSOs do not have enforcement powers, they report to inspectors who are responsible to take actions when needed



Inspection of large-scale or longer-lasting activities

- similar organisation as for outage inspections
- inspectors uses support from TSOs and SMEs
- typical inspections were the 1st campaign of transferring spent fuel to dry storage and forced outage due to SI line leakage
- deviations found by inspectors and TSOs corrected immediately, but after completion of activities recommendations and suggestions for additional improvements are discussed

1st campaign of spent fuel transfer to DSB
Inspectors and TSOs continuously supervised critical activities

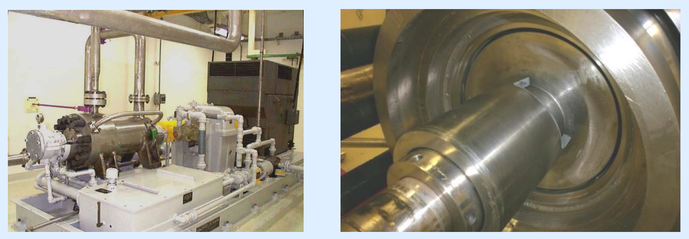
Forced outage in October and November 2023
Continuous inspection was carried out during preparation and implementation of works

Corrective actions and enforcement

- practically unlimited powers of inspectors by Slovenian legislation
- extreme measures such fines, are not common in practice
- professional and open discussion and requesting corrective measures is a much better long-term approach and leads to the improvement of safety culture and nuclear safety
- findings are recorded in the inspection report, together with deadlines for implementation of corrective actions
- for non-compliances or violations of legislation or Technical Specification enforcement and corrective measures are imposed later in inspection decree
- in case of threatens the health of employees or the environment, the inspector orders measures on the spot immediately

Main results

- some additional improvements/modifications implemented
- implementation of comprehensive safety upgrade programme after Fukushima accident
- improvement of processes, procedures
- improvements in reporting



Degradation of CVCS charging pump in 2018 (break of balancing disc)
Based on event occurred and SNSA inspection on-line vibration and bearing temperature monitoring system for CVCS pumps was implemented in refuelling outage 2021

Conclusions

- effective inspection system for the Krško NPP, as well as other nuclear and radiation facilities in Slovenia, was developed
- small inspection team effectively inspect all operation areas, including implementing comprehensive inspections. Unique approach was developed to inspect refuelling outages and large-scale activities with additional support of TSOs and SMEs
- inspections, together with other SNSA oversight activities, not only ensures that the Krško NPP is operated in accordance with Slovenian legislation, international standards and best practises, but also independently contributes to the continuous improvement of nuclear safety and operational performance.