

“Security in the Civil Nuclear and Aviation Sectors – What can they learn from each other?”

The World Institute for Nuclear Security has conducted a major benchmarking research project comparing the evolution and future security challenges faced by the civil nuclear and aviation sectors with the purpose of identifying transferable best practices between them. This paper will provide a summary of the overall conclusions of the research which will be published at the end of 2019.

On first inspection one might ask what these two sectors have in common and why benchmarking their security arrangements is at all relevant.

On the one hand, commercial, civil aviation is a very public activity, transporting billions of people each year between airports. It is a highly dynamic and competitive international sector, where time is money, and where customer satisfaction is a high priority. On the other hand, nuclear power plants (and associated fuel cycle facilities) are some of the most robust, static structures on earth with control points that prevent unauthorised public access. Security at these plants is often characterised by the phrase “guns, guards and gates”; in strong contrast to the public image that airports are trying to achieve.

Yet there are some very important similarities between these sectors. The first is in the way that they are “supervised” by the international community. Both of these sectors are overseen by UN-affiliated international organisations (the International Atomic Energy Agency –IAEA, and the International Civil Aviation Organization –ICAO) comprising their Member States, though neither of these organisations has security mentioned in their founding Statutes.

Both sectors have competent authorities (regulators) that are responsible for national regulations within the international frameworks of standards, recommendations and guidance. Both sectors are considered part of a State’s critical national infrastructure, and both sectors are of concern politically and publicly in respect of possible terrorist attacks. And of course, operators in both sectors would say that their number one priority is “safety and security”, in what need to be high reliability organisations.

The research study has comprised a comprehensive analysis of the publicly available information on aviation and civil nuclear security - both the IAEA and ICAO publish extensive information as do the various trade associations that represent the aviation and, to a lesser extent, the civil nuclear sector. However, in the case of nuclear security, this is supplemented by the work of a significant number of non-governmental organisations that monitor and comment publicly on the work of the IAEA and the state of global nuclear security generally. WINS has also worked with experienced practitioners in both sectors and interviewed countless individuals with responsibilities for aviation and nuclear security, at all levels.

Taken together, this research programme is the most comprehensive effort ever undertaken to benchmark security in these critical sectors, and to identify root causes for any differences and opportunities for cross-sector improvement. Subjects covered include:

- A comparative analysis of the civil nuclear and aviation sectors, the threat landscape and analysis of events and incidents over the last 50 years,
- The role and evolution of the IAEA and ICAO in establishing security guidance, recommendations and standards, and their interface with key stakeholders, including industry,
- The implementation of international security recommendations and standards,
- The IAEA and ICAO technical support programmes for security (i.e. IAEA Integrated Nuclear Security Support Plans –“INSSPs”–and the ICAO “No Country Left Behind”programme),
- International peer review and audit for aviation and nuclear security,
- Comparative approaches to security training, professional development and capacity building,
- The development and sharing of best operational security practices within the two sectors,
- The development of Security Management Systems, regulatory approaches and the interface between safety and security,
- A comparative analysis of how insider threats, human reliability programmes and cybersecurity are being addressed in the two sectors, and
- Future challenges and issues for security in the aviation and nuclear sectors.

As noted, this paper will provide a summary of the overall conclusions of the research that we believe will lead to demonstrable and sustained improvements in security in both sectors and at all levels, for the benefit of civil society.

State

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