FORATOM
THE VOICE OF THE EUROPEAN NUCLEAR INDUSTRY

Comments

Comments on the SET-Plan Issues Paper No.10 – 'Nuclear'

FORATOM has been invited by the SET-Plan Secretariat (email dated 7 April 2016 from Mr Marc Noel, JRC, Petten) to present its views on the draft EC working document 'Issues Paper No.10' addressing Key Action No.10 'Maintaining a high level of safety of nuclear reactors and associated fuel cycles during operation and decommissioning, while improving their efficiency' of the Integrated SET-Plan Communication of September 2015.

The European Atomic Forum (FORATOM) is the Brussels-based trade association for the nuclear energy industry in Europe. The membership of FORATOM is made up of 16 national nuclear associations. Through these associations, FORATOM represents nearly 800 European companies working in the industry and supporting around 800,000 jobs.

1. General comments overall

FORATOM considers that the draft Issues Paper is welcome, covers an appropriate scope, and gives a reasonable overview of nuclear R&I objectives consistent with the concise nature of the paper. We do not feel that there are any major omissions or deficiencies. However, we have some more detailed comments on the different sections of the report as follows.

2. Introduction

In general, we agree with the statements in the Introduction. FORATOM welcomes the paper's acknowledgement of the contribution of nuclear energy to the EU's competitiveness, security of energy supply and energy and climate policy objectives. The quotations in the paper from the R&I section of the Energy Union Communication of February 2015 are particularly apt, especially that "the EU should also ensure that it maintains technological leadership in the nuclear domain…so as not to increase energy and technology dependence". FORATOM has commented elsewhere that it was however regrettable that the Decarbonisation section of the same Communication made no reference to nuclear energy at all! Moreover that the Security of Energy Supply section failed to acknowledge the benefits of nuclear and referred only to a potential fuel supply diversity problem in the few Member States relying on Russia for nuclear fuel supplies. We would like to see the Commission maintaining better consistency between the various policy documents when it comes to nuclear energy, and preferably to state clearly – as the current Issues Paper does – that nuclear energy is of benefit to the EU as a whole and not just to those Member States that choose to host nuclear power plants.

Another case in point arises from the SET-Plan Communication of September 2015. FORATOM welcomed the recent extension of the Euratom collaboration with GIF, endorsed by Council in February 2016, indicating that the EU supports continuing R&D into advanced and innovative fission reactors (Generation IV); this work is a key plank of the SNETP SRIA under ESNII and also underlined as a target of the SET-Plan in the current Issues Paper. It was therefore surprising to see in the SET-Plan Communication, under Priority 10, the statement "Long-term research and innovation in the EU focuses on the development of nuclear fusion" without any mention of long-term fission research!

3. Targets

The title of target 1 “Maintaining a high level of safety and security” is in our view too restrictive. The heading of Priority 10 in the SET-Plan Communication is “Maintaining a high level of safety of nuclear reactors and associated fuel cycles during operation and decommissioning, while improving their efficiency”. Moreover, the heading of Challenge 1 of SET-Plan Heading 5 (Annex 2 of the Issues Paper) is “Safe and Efficient Operation of Nuclear Power Plants’. The target 1 title needs to include the reference to efficiency, even competitiveness, especially as one of the sub-targets refers to “optimisation of NPP operation”. FORATOM would like to recall that the objective of the EU nuclear industry is to produce reliable and competitive low-carbon electricity safely, and not just to improve safety!

We would challenge the emphasis placed on NPP operation “as a function of predicted demand, and integration with more intermittent suppliers”. Whilst some existing NPPs are proven to be remarkably agile at varying their power output down to say 50% of maximum output, there is clearly a penalty to be paid in terms of shortened operating lifetime. Whilst there is indeed scope for additional research to better understand the effects of such cycling and to mitigate them, the economics of nuclear power are such that NPPs, especially new ones, are only likely to be profitable in today’s markets if they can operate at, or close to 100% capacity. It is, in our view, more for the suppliers of intermittent electricity to provide their own back-up for the times when the wind is not blowing or the sun is not shining, in other words to provide “firm capacity”. In the absence of large-scale electricity storage or CCS for fossil-fuelled back-up, we believe that there is still an important role for carbon-free nuclear electricity as baseload, i.e. helping to limit the amount of variable output on the grid.

4. Cross-cutting challenges

We note the sub-heading “ensuring synergy between safety, security and safeguards”. We discussed this so-called “triple-S” approach in ENEF. The view then was that whilst there could be some overlap in terms of dealing with incidents, the three areas were so different in terms of requirements that there seemed to be very little scope for real synergy. It would be interesting to hear if JRC, for example, has a different view.

The topic “standardisation of reactor codes, enabling a common reference to be established between all actors involved in the design, construction and licensing of nuclear facilities” is a laudable goal but seems to us to be over-ambitious relative to the SET-Plan timescale. FORATOM is in favour in general of increased harmonisation as a way of facilitating design approvals and component supply leading to improved economics. We are in favour, for example, of common regulatory approaches to safety reference levels or generic reactor design approval between Member States, ref. ERDA. Whether we can realistically arrive at common reactor codes in an increasingly globalised industry where we have French, US, Russian, Japanese, Korean and now Chinese designs competing in the world market is however doubtful, at least for the foreseeable future.

The topic on “state-of-the-art research infrastructures” should also refer to reactor test loops for heat transfer and fluid dynamics research, which are becoming increasingly scarce and valuable.

In the penultimate sentence of this section, rather than saying “it will not be easy for Europe to retain leadership in all areas”, FORATOM proposes the EC to say “Europe can only retain leadership in these areas, given the increase in nuclear generating capacity in the rest of the world, *by maintaining a vibrant indigenous nuclear industry and a correspondingly enlightened and well-funded nuclear research capability*.

5. Annex 1

Our in-house lawyer checked through the legal and policy framework and had no comments.