

## JANSI Annual Conference 2022 Responses/Opinions Given to Comments and/or Questions

May 11<sup>th</sup>, 2022

JANSI's replies, views and other comments are posted below to comments and/or questions received in chats during the conference or from the post-conference survey.

Category	Comment/Question	Response/Opinion from JANSI (or Presenter)
Keynote Speech "Healthy, Safe & Effective Organizations : A Systemic Approach"		
Question	<p>Question for Dr. Hollnagel</p> <p>Is the process from "reactive" to "resilient" linear? I personally feel there are occasional, yet major, gaps along the way that call for phase transitions. What are your thoughts? I think a particularly significant qualitative gap exists from the "compliant" phase and beyond. Do you have any important practical points as to going past the gap and advancing further?</p>	<p>Thank you for your question. We received the following reply from Dr. Hollnagel.</p> <p>The difference between a "reactive" (Safety-I) and "resilient" (Safety-II) approach is mainly a change or extension of perspective. Being reactive means that the emphasis is on avoiding that something goes wrong. The rationale for that goes back to Heinrich (1931) who wrote that "the cure of a given troublesome condition depends primarily upon knowledge of its cause and the elimination, or at least the mitigation, of that cause". Being resilient means that the emphasis is on how to ensure that the system can perform as required. This means that attention must be paid to all operations, and not just those that have failed.</p> <p>In my view, the problem is therefore not so much gaps or obstacles in a (linear) progression from one state to another (from "reactive" to "resilient"), but rather that it can be difficult, for a person or an organisation, to change how to look at things and how to deal with them. It requires taking a step away from certainty and routine into something that seems uncertain and where the comfort that lies in doing things "as usual" cannot be guaranteed. There is an understandable reluctance and resistance to do so. One solution is to avoid a big jump or change and instead do it in smaller steps. For instance by considering carefully what compliance actually means, and whether there really is a balance between the advantages and disadvantages.</p>

Category	Comment/Question	Response/Opinion from JANSI (or Presenter)
Question	<p>Question for Dr. Hollnagel</p> <p>I do agree on the need to evaluate systemic potential from four different perspectives that lead to specific action, but shouldn't we also look at relationships within an organization that can allow for them to co-exist? That, I believe, is the crux of an organizational culture that makes it possible to adapt well to complex issues. Can you share your thoughts?</p>	<p>Thank you for your question. We received the following reply from Dr. Hollnagel.</p> <p>It is absolutely necessary to look at the potentials together. It is also necessary to look at the various concerns and objectives (safety, productivity, reliability, etc.) together rather than one-by-one. Unfortunately nearly all models are expressed in terms of separate parts or elements (the sharp-end, blunt-end; the levels of safety culture; Edgar Schein's model of organisational culture; WANO's 10 traits) and we therefore tend to pay more attention to the parts than to how they relate to or depend on each other. The methods that go together with these models usually also fail to pay sufficient attention to the relations, but focus on the parts in more or less splendid isolation. In order to look at the relationships, systems should be described in terms of their functions rather than their structures (physical or organisational). There are fortunately good ways of doing that, ranging from Forrester's system dynamic models to the Functional Resonance Analysis Method.</p>
Question	<p>Question for Dr. Hollnagel</p> <p>Your definition on performance was interesting. At INPO and WANO we have said that performance = behaviors + results. We use this often in helping frame our opinion for an overall assessment or grade of performance. In light of your presentation we might conclude it is overly simple and therefore not that useful. What thoughts do you have on this alternate definition of performance? Thank you.</p>	<p>Thank you for your question. We received the following reply from Dr. Hollnagel.</p> <p>In the sciences, for instance psychology, it has never been easy to agree on the difference between performance and behaviour. In relation to nuclear safety, behaviour describes what humans do (as individuals, and often relative to social norms) whereas performance describes how the system, humans plus technology plus organisation, functions and how well it is able to achieve the intended goals. Behaviour is what people do when faced with a task, while performance is what a system should be able to do to remain in control.</p> <p>In the operation of an NPP it is necessary to pay attention to the process, to how things are done, in addition to paying attention to the results. (The latter leads to a reactive approach.) But understanding and managing the performance of a system, of an NPP, cannot be accomplished by looking only at the parts, e.g., human behaviour. In line with the issues raised in question above in this page, it is necessary to be able to understand system performance in its many details and to manage these together. Resilient performance has been defined as the ability of an organisation to function as required under expected and unexpected conditions alike. This requires a change in perspective (cf., question in page 1) and using an alternative definition of performance may contribute to achieve that.</p>

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Question	<p>Question for Dr. Hollnagel</p> <p>I understand that technical resilience supported by margin, tolerance and buffering capability and embedded in the plant systems and components would be the basis of human and organizational resilience that is mainly discussed today. How do you think about mutual chemistry between technical resilience and human &amp; organizational resilience, and how can we optimize this chemistry with what specific actions?</p>	<p>Thank you for your question. We received the following reply from Dr. Hollnagel.</p> <p>Since resilient performance means the ability to function as required under expected and unexpected conditions alike, it is not really necessary to think of resilience as a quality or as something that a system (or a part of it) has. Resilience is rather something that a system does, i.e., that it characterises a certain type of performance. The materials of technical systems can be physically resilient, although this is of limited interest today. Technical systems can also to some extent be functionally resilient because they may be able to adjust their functioning to the conditions. (This is something that may become more important in the future if and when artificial intelligence migrates into technical systems.)</p> <p>It is better to focus on the resilient performance of the whole (socio-technical) system, than on the resilient performance of the parts (plant systems and components, humans, the organisation) and to try to understand how the system functions as a whole. The suggestion of the four systemic potentials (respond, monitor, learn, anticipate) is a way to do that. Each potential will require the combined efforts of humans, technology and organisation but unified rather than fragmented. The four potentials must also be considered together rather than individually, as discussed in relation to question listed above in page 2.</p>
Comment	<p>I felt the messages are clear and persuasive based on his experiences.</p>	<p>Thank you for your comment. So that the conference meets everyone's expectations, we will strive to enrich content through appropriate planning and smooth administration.</p>
Comment	<p>I became painfully aware it is insightful that the word that a complex problem will not be simplified even if it is disguised as a simple one.</p>	
Comment	<p>Although the presentation was highly suggestive, I felt it was difficult to understand how I should take actions concretely.</p>	<p>Thank you for your comment. We will take the comments voiced into consideration in planning and administering future conferences as we strive to further enhance and improve conference content.</p>

Category	Comment/Question	Response/Opinion from JANSI (or Presenter)
Panel Discussion "Enhancement of Resilience in Nuclear Safety - New Perspective for Plant Operation -"		
Question	Question for Mr. Regaldo  How does EDF integrate ASN's (the French nuclear safety regulator's) assessment of NPP performance in the areas of nuclear safety and safety culture into its Roadmap on slide 4?	Thank you for your question. We received the following reply from Mr. Regaldo.  The French Nuclear Safety Regulator (the ASN), usually doesn't carry out systematic and periodical safety culture assessment. Most of its inspections are focused on specific topics or are following significant nuclear safety events. When a thematic inspection is dedicated to nuclear safety or interventions reliability management, of course, we take into account the lessons learned and recommendations. These external inputs were not figuring in the drawing of slide 4, because this slide was figuring a simplified process and because these inspections feedback are not systematic.
Question	Question for Dr. Nakajima  Your presentation gave me good insight into the importance of boundary spanners. To efficiently perform in a nuclear power station, where tasks range from operations and maintenance to radiation control, boundary spanners can serve significant roles. How can we develop such leadership? Can you give us some suggestions with an example in health care settings?	Thank you for your question. We received the following reply from Dr. Nakajima.  I think it is necessary to communicate this term itself and its concept and significance using various opportunities (training, meetings, etc.). For example, a single patient safety manager (generally the head nurse) is usually assigned at a Japanese hospital. When examining measures for incidents reported by various professionals at the hospital, you get stuck if you think you have to find a solution all by yourself. On the other hand, if you know people that may come up with a solution, call out to them, and gather their knowledge, you can find countermeasures or inspiration. "What I am doing is boundary spanning (bridging people or departments to achieve a goal and solve an issue, and promoting coordination and team learning across boundaries)." "It is a trait of good leadership and an important role for demonstrating organizational resilience." By being aware of these, a patient safety manager can work with confidence, which results in flexible and autonomous performance from the bottom-up as an organization. Rather than developing boundary spanners, there are many of them already in the organization, but people who can fulfill that role are different depending on the issue or case. I think it is necessary to give a name to such kind of leadership (to be a hub for cross-boundary working and human networking) and promote and approve such behavior.

Category	Comment/Question	Response/Opinion from JANSI (or Presenter)
Question	<p>Question for Dr. Nakajima</p> <p>On page 17 of Dr. Nakajima's slides, it says, "learn from success to improve resilience." Please share with us how you focus on successful cases. Is there any threshold that defines success, or is it randomly sampled?</p>	<p>Thank you for your question. We received the following reply from Dr. Nakajima.</p> <p>That is a good point. In Professor Hollnagel's resilience engineering theory, it is important how you express this word which is expressed as "everyday (clinical) work" or "things that go right." In Japanese, "success" means successful cases or gives an image of a specific event, but here, it means "a vast number of daily operations" that is not an adverse event or incident. He said that it is difficult to be expressed in one word.</p> <p>Furthermore, the Swiss cheese model, which is an accident model that has been used in conventional safety management, is a linear model (for example, it is explained that an accident occurred due to an additive result of an error by A, lack of confirmation by B and failure of equipment C), but resilience engineering theory is based on a non-linear model where success and failure are equivalent. In other words, we believe that things go well thanks to people's performances adjustment, but when this adjustment (=variability) of performance, which is essential and inevitable for such work, causes non-linear functional resonance, it becomes an accident. Therefore, although it says "learning from success," precisely speaking, "how everyday work is performed" is a subject to be learnt. However, from an outcome viewpoint, adverse events are a few, and the remaining cases are significant in number. That is why it is expressed as "learn from success."</p> <p>Now what to focus on when practicing this approach. I will share an example from our hospital. Responding to an incident of pharmacists dispensing oral medications to a hospitalized patient, Safety-II, proactive safety management was introduced. We focused on the "process of administering oral medications to inpatients," which is a frequent daily operation, instead of Safety-I which implements "identifying causes of human errors and improving compliance for prevention." Systems involved in this process were broadly looked at, specifically, understanding how pharmacists and nurses adjust their performance in an environment with constraints (limited number of pharmacists and time available for dispensing) in the process of physician prescription order → pharmacist dispensing → drug transportation to inpatient wards → ward nurse distributing drugs to inpatients. Then we identified systemic problems arising from their interactions and implemented fundamental solutions instead of patchy measures for symptomatic problems.</p> <p>The short answer to the question, "what is focused on" is that we focus on highly frequent daily operations. Its purpose is to understand people's performance adjustment and their interactions for achieving their goals and proactively manage the system so that things go well (achieving the intended goals under perturbations and constraints).</p>

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Question	<p>Question for Mr. Nagai of Shikoku Electric Power Company</p> <p>Ikata Nuclear Power Station's establishment of its Process Control Section was interesting. I would also like to know what your evaluation is as to sections in charge of work becoming dependent on such cross-sectional groups and negatively impacting organizational culture.</p>	<p>Thank you for your question. We received the following reply from Shikoku Electric Power Company.</p> <p>The sections in charge of work shall gain approval of the manager upon improving and confirming the work procedure such as incorporating items from the previous work or other work into the work procedure. Thus, we do not think they are dependent on the Process Control Section.</p> <p>If the review of the Process Control Section finds insufficiently reviewed work procedures, the Process Control Section will alert the sections in charge of work to take appropriate actions.</p>
Comment	I could get the new perspective to share with my team members.	<p>Thank you for your comment. So that the conference meets everyone's expectations, we will strive to enrich content through appropriate planning and smooth administration.</p>
Comment	I felt that the departure from current nuclear situation where compliance is extremely emphasized is the goal for us to head from now.	
Comment	I was impressed by the speech on medical field. In order to create a more open workplace, I took a hint to improve effectively.	
Comment	Facilitation of the chairperson was natural, so I could receive panelists' messages comfortably.	
Comment	Presentation on psychological safety and teaming was so informative.	
Others		
Comment	It was said that the materials can be downloaded from the linked one, but I couldn't because the security system of my company was severe.	<p>Thank you for your comment. We will consider clarification of inquiry contact and more than one method to download materials or view online, and we strive to further improve continuously.</p>
Comment	I viewed online via webex, but I took time to find out the reason of trouble of sound.	
Comment	I hope web conference continuously after the corona pandemic is over.	<p>Thank you for your comment. We will take the comments voiced into consideration in planning and administering future conference.</p>

Thank you for your valuable comments and questions. We will use these for future reference as we continue in our efforts to further improve conference content.

We have consolidated some similar comments and questions and omitted others relating to administrative matters etc. Thank you very much for your understanding.

End