

JANSI Annual Report 2023



JANSI
Japan Nuclear Safety Institute

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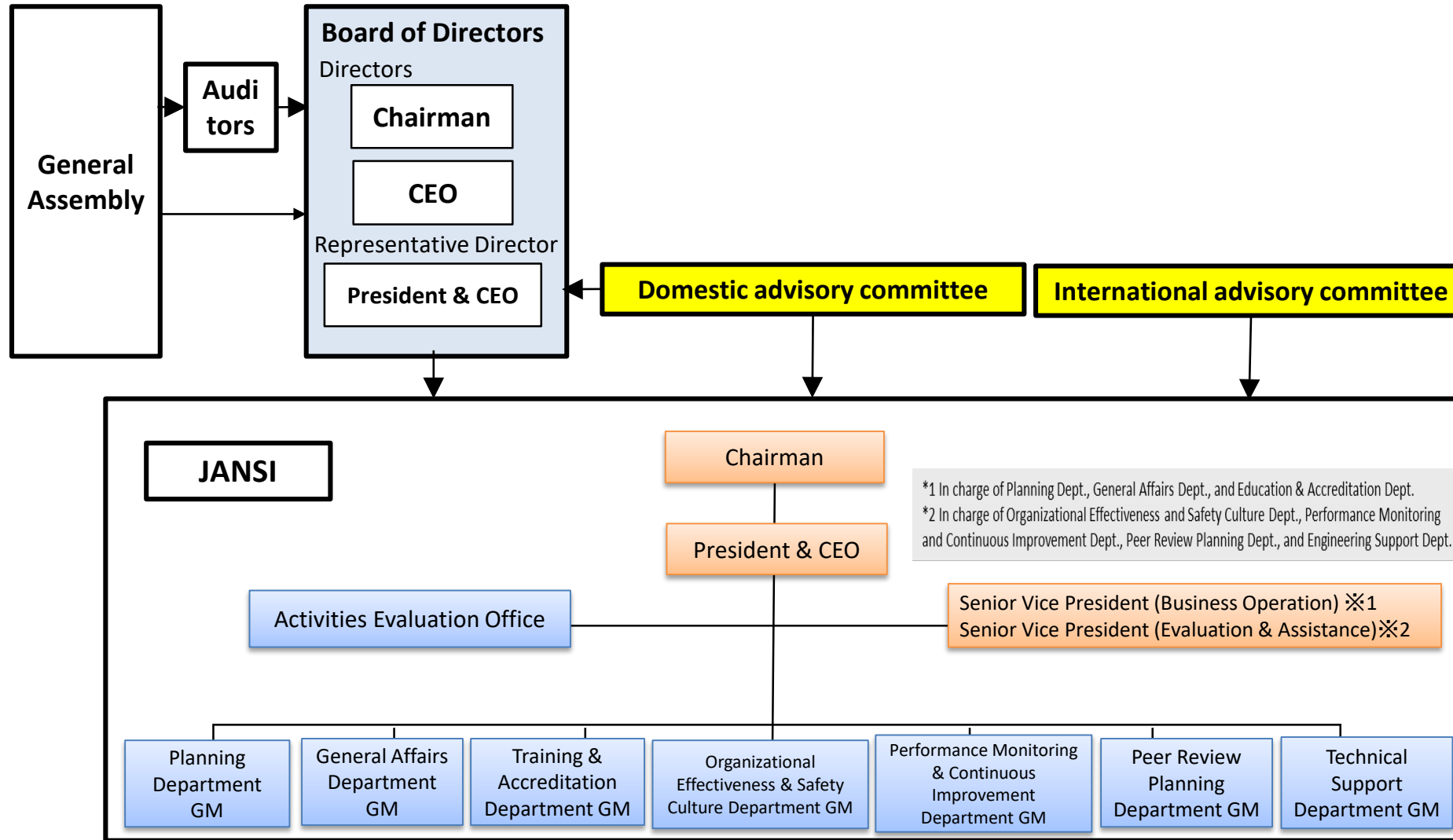
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References

Overview of JANSI



- Name : Japan Nuclear Safety Institute (JANSI)
- Date of foundation : November 15, 2012
- Number of members : 128 (as of end of March 2024)
- Number of personnel: 187 (as of end of March 2024)
- Chairman : William Webster Jr.
- President & CEO : Isao Kato



Based on the consensus of the industry that "the Fukushima Daiichi accident will never happen again," JANSI was established in November 2012 as a self-regulatory organization, modeled after INPO (American Nuclear Power Operations Institute) serving the U.S. nuclear industry, as a mechanism for a private sector organization holding an independent position to lead nuclear operators to continuously and voluntarily pursue further excellence from an independent perspective.

Mission

Pursue the World's Highest Level of Safety in the Japan's Nuclear Power Industry

(Untiring Pursuit of Highest Standards of Excellence)

Future vision

JANSI leads the operators from an independent standpoint as the authority of world's excellence.

By establishing voluntary and continuous safety improvement initiatives, the operators have achieved the world's highest level of safety and reliability, and are maintaining and continuing that state.

“Self-regulation” means the operators voluntarily and continuously improving safety and pursuing excellence by disciplining oneself and each other, not being satisfied with meeting only legal regulatory standards.

“Self-regulatory organization” is an organization that maintains independence and leads the operators so that their self-regulation can proceed effectively and efficiently.

Roles and Responsibilities in Self-regulation

[JANSI members (operators)]

- As a main actor of self-regulation, operators fulfill their responsibilities as a member of community and continue to make united efforts to improve safety
- Individual and collective responsibility for safety of nuclear facilities
- Give authority and support to a self-regulatory organization to implement the mission

[Self-regulatory organization (JANSI)]

- Roles and responsibilities to assist self-regulation activities effectively and efficiently
 - Evaluate and monitor self-regulatory activities (Watchdog)
 - Stimulate activities (Catalyst)
 - Promote activities by showing the path forward (Facilitator)
 - Be firm anchorage (Accountable Agent)
- Technical capacity that underpins the authority of self-regulation
- Appropriate relationship with the regulator

Basis for Self-Regulatory Organization (JANSI) Activity

[Granted strong authority]

- Commitment to utility CEOs based on the “Collaboration Principles”
 - Respect and maintain independence
 - Granted authority to plant shutdown
 - Granted access rights to power plant information, etc.

[Development of organization/framework]

- Appointment of all utility CEOs as Directors
- External oversight (Domestic and International Advisory meetings)
- Reorganization within JANSI in line with the 10-Year Strategy

[Formulation of the 10-Year Strategy]

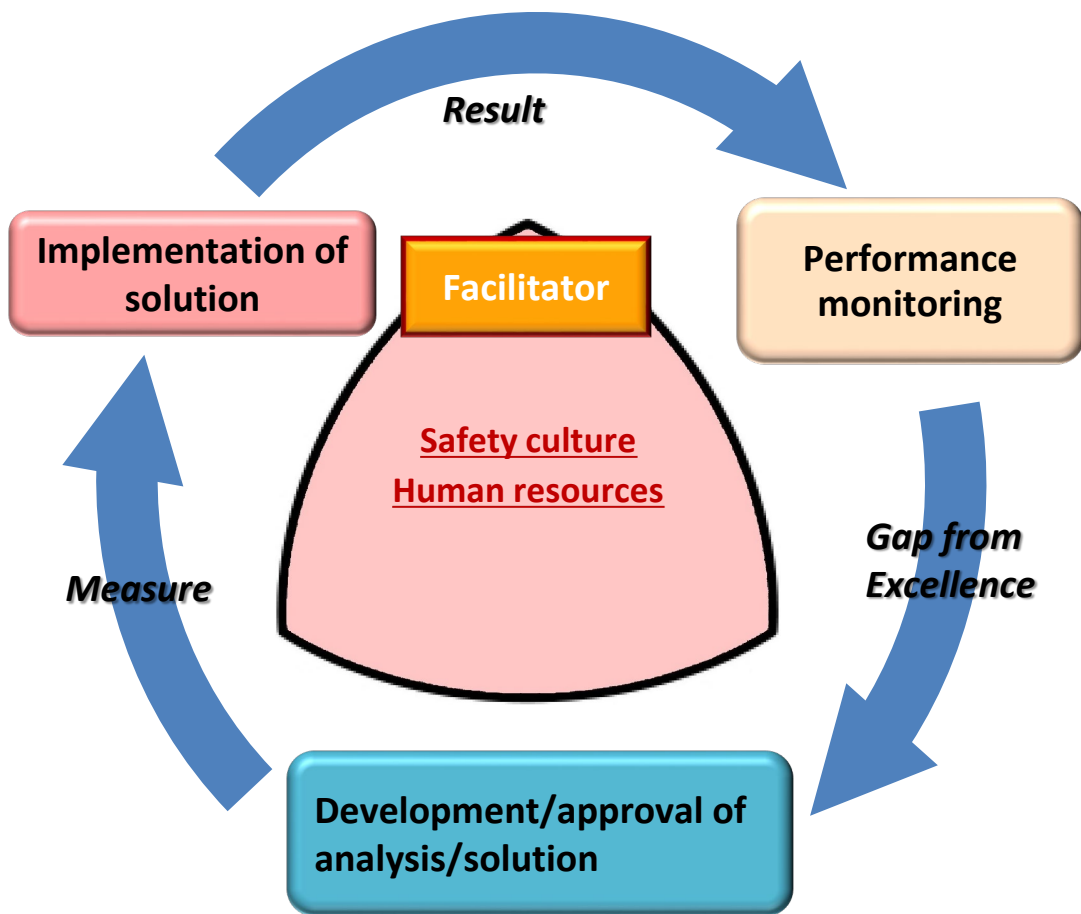
- Identification of main activities to achieve the future vision and formulation of the 10-year activity plan. Clarification of the path to achieving the vision.

In order to achieve the mission, JANSI's core identities, unique strengths, and JANSI employees' values and criteria for carrying out activities are clarified.

These are the starting points of JANSI activities such as communication and collaboration with the operators, as well as international organizations such as WANO, domestic organizations such as ATENA, and the regulator. JANSI will share these recognitions, work on self-development every day, and pass them on, making it a foundation for demonstrating the overall strengths to always take on challenges.

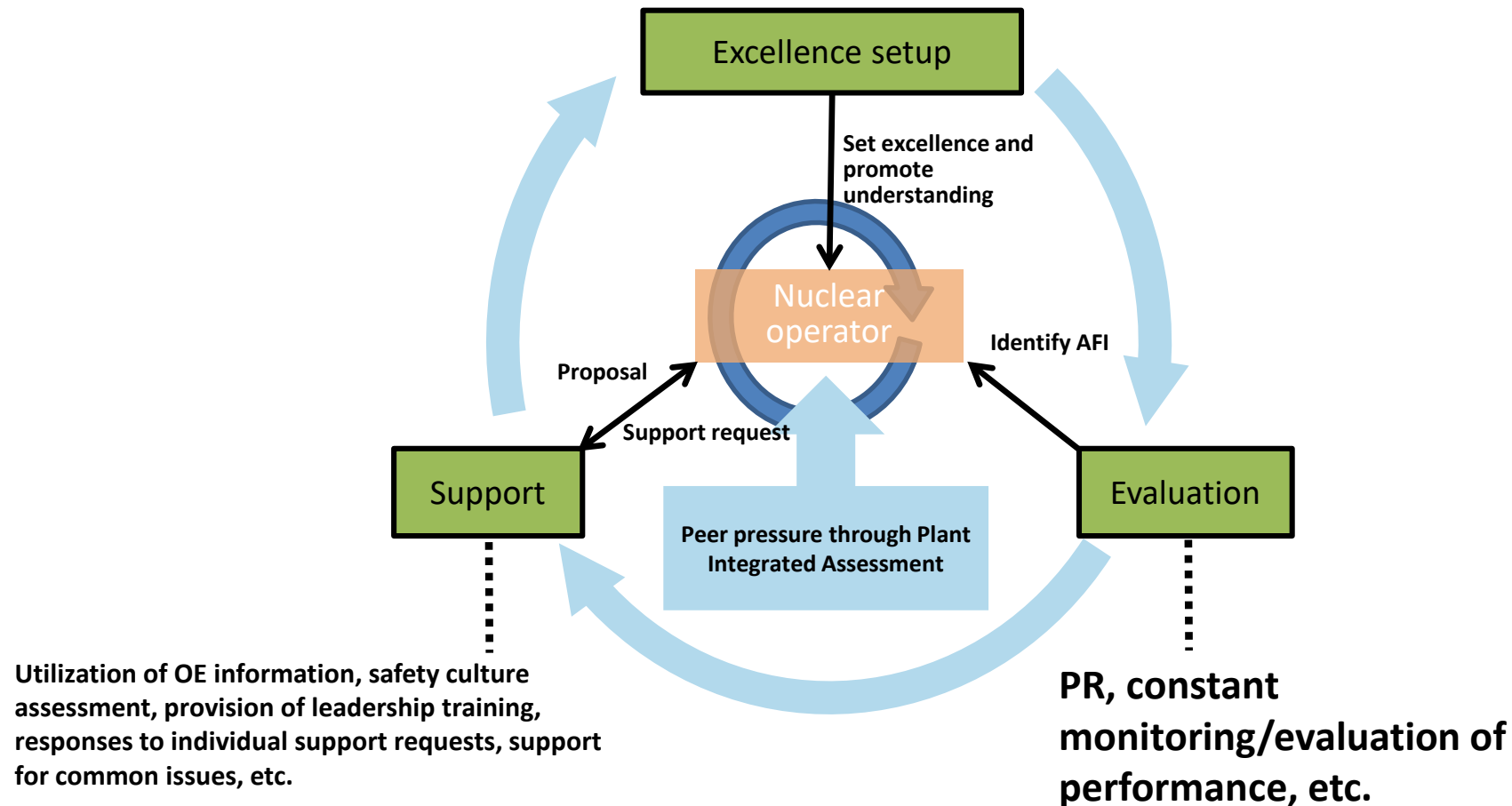
<p><i>Core Identities</i></p> <p>JANSI's raison d'etre, Unique strengths</p>	<p><i>Core Values</i></p> <p>JANSI employees' values and criteria for carrying out activities</p>
<ul style="list-style-type: none"> ● Is an authority of excellence ● Community formation and independence from each operator ● Overall observation/evaluation and thoughtful insight ● Catalyst function that promotes improvement ● Collaboration with domestic/overseas organizations <p>《Identities in comparison with international organizations》</p> <ul style="list-style-type: none"> ▪ Evaluation/assistance based on an understanding of Japanese culture and systems in Japanese language ▪ Acts as a bridge between Japan and overseas' excellence ▪ Maintain a close community among the operators, and utilize as a platform for pursuing excellence ▪ Close cooperation with related organizations in Japan 	<ul style="list-style-type: none"> ● Never forget the Fukushima Daiichi lessons learned ● Commitment to "pursuit of excellence" ● Integrity ● Build trusting relationship with the operators and related organizations ● Demonstrate leadership ● Close internal communication and cooperation

6 Initiatives for Autonomous and Continuous Improvement by Plants



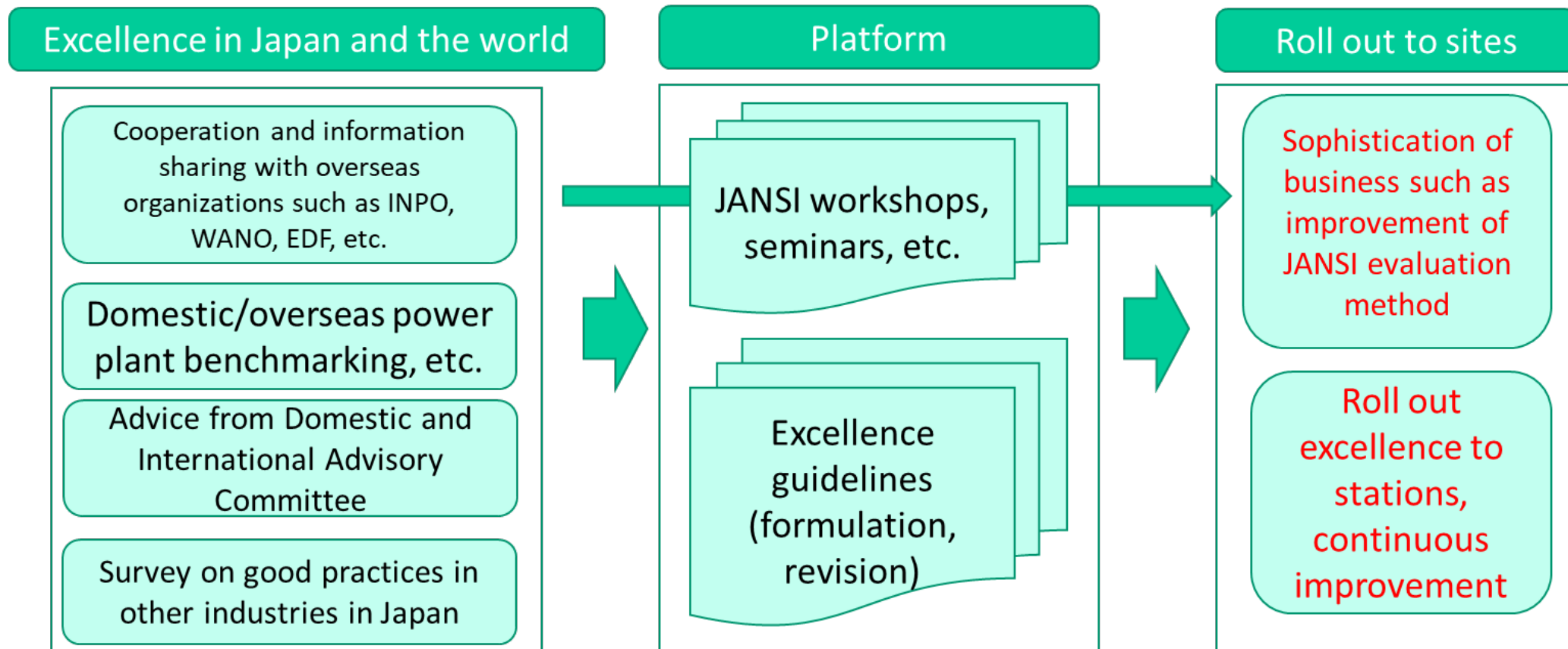
Initiatives for autonomous and continuous improvement (<u>mechanism</u> example)	
Performance monitoring	<ul style="list-style-type: none"> ○ On a daily basis 【Collect excellence information, etc.】 <ul style="list-style-type: none"> ▪ Benchmarking ▪ Excellence guidelines ▪ OE information 【Catch up with the site situations】 <ul style="list-style-type: none"> ▪ CAP ▪ Performance indicator ▪ Management observation
	<ul style="list-style-type: none"> ○ On a regular basis 【Self assessment】 <ul style="list-style-type: none"> ▪ Effectiveness assessment 【Third party assessment】 <ul style="list-style-type: none"> ▪ Independent oversight ▪ External oversight (JANSI, WANO)
Development/approval of analysis/solution	<ul style="list-style-type: none"> ○ On a daily basis <ul style="list-style-type: none"> ▪ CAP/Risk management Identify risks based on various types of information and determine responding policy according to the importance
	<ul style="list-style-type: none"> ○ On a regular basis <ul style="list-style-type: none"> ▪ PI Committee Analyze the performance comprehensively based on various types of and determine responding policy
	<ul style="list-style-type: none"> ○ Key points to solve <ul style="list-style-type: none"> ▪ “New setting and review of expectation/new standards,” “process review,” “education improvement,” “stronger involvement of senior management (Plant Manager, Deputy Plant Manager)/managerial positions (Manager)”
Implementation of solution	<ul style="list-style-type: none"> ○ Key points for effective implementation <ul style="list-style-type: none"> ▪ Involvement of managers (monitoring) ▪ Clarification of role division/responsibility ▪ Allocation of resources

Clarification of excellence (guidelines, etc.)



Pursuit of the World's Highest Level of Excellence

JANSI acts as a "bridge between Japan and the world" and as the "nuclear industry's platform," it pursues excellence in Japan and the world and shares with the operators to encourage continuous improvement.



【Evaluation of the current 10YS status】

- 10YS is progressing almost as planned
- Plant performance achieved the target
- Only 12 stations have been back in service, and no BWR has restarted yet. Therefore, the evaluation is provisional

【Main Environmental Changes】

○ Increased role of nuclear power, rising expectations

- Improvement of safety/reliability of NPPs, etc.*
 - Response to/restart of long-term shut down plants
 - Achieve 20-22% of electricity generation in 2030
 - Response to over 60 years plant life
 - Steady operation of cycle facilities
- Steady recruitment and development of personnel
- Earn greater understanding/trust from stakeholders & society
- Advancement/utilization of information technology
- Operators' opinions on future nuclear power business

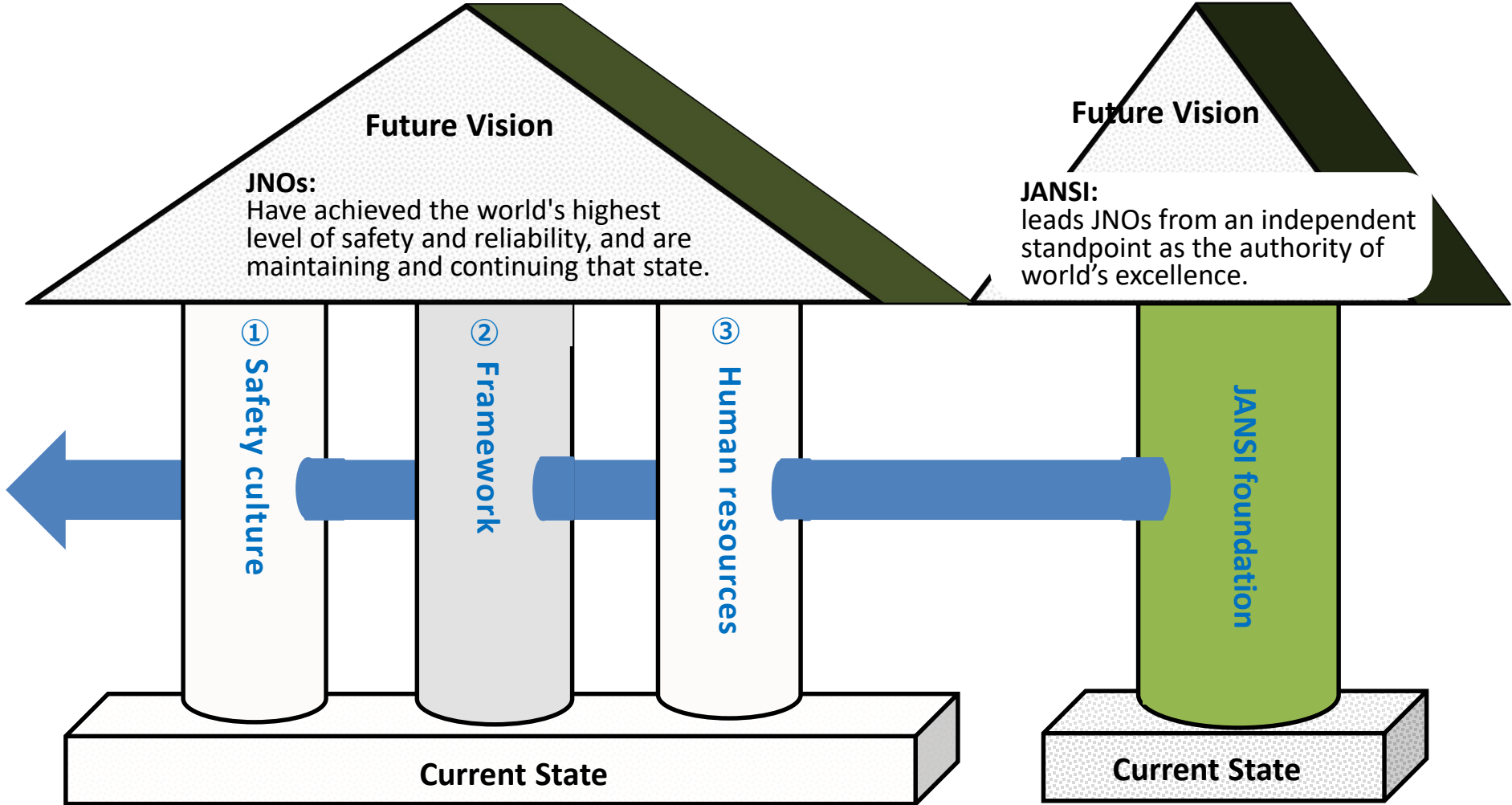
【U.S. Industry Benchmarking】

- The operators are making effective use of INPO platforms and are making improvements autonomously and continuously
- The value of "Staying on TOP" (sustainability) has been instilled

*: Station, Construction center, Cycle facility

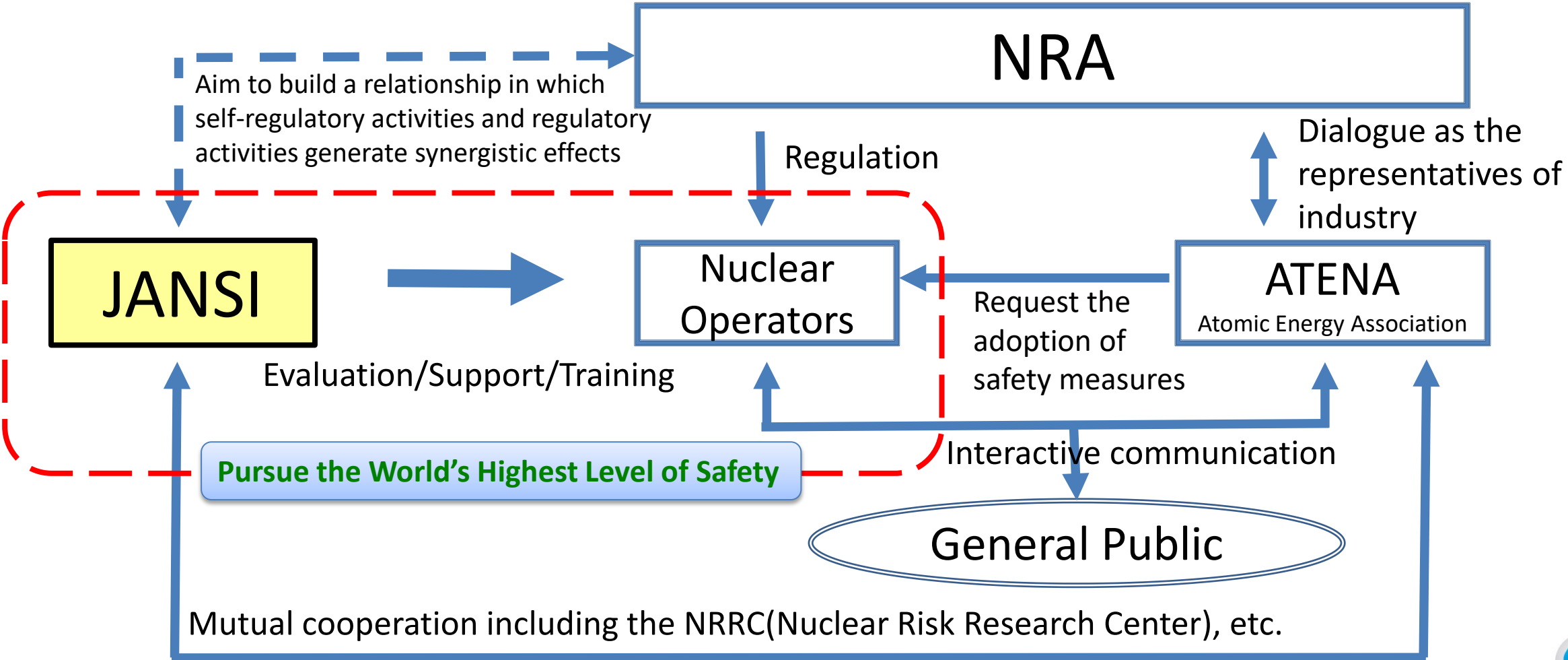
Deepening and Development of Self-regulation

- ① To ensure that the lessons learned from the Fukushima Daiichi accident are not forgotten and that **the attitude of autonomous and continuous improvement is instilled from the top management to each and every front-line worker** and is reflected in their behavior, firmly continue activities to pursue excellence in safety and reliability.
- ② Set a higher achievement level, and build **a stronger community** where the **operators autonomously promote improvement** and provide mutual support.
- ③ Continue implementing PR while working to maintain/improve technical capabilities in order to **make PR more effective/efficient**. Deepen the **technical collaboration with WANO**.
- ④ Further develop the initiative to **continuously monitor and evaluate performance**, detect signs of decline at an early stage, which encourages the operators to respond autonomously and achieve/maintain/sustain high performance.
- ⑤ Contribute to the achievement of 20-22% by striving to **further improve the safety and reliability** of operating plants. Secure the necessary technical capabilities.
- ⑥ Safe restart of the long-term shutdown plants, continued safe and stable operation of nuclear fuel cycle facilities
- ⑦ Work to **build even stronger trusting relationship** with the stakeholders and promote effective and efficient initiatives.
- ⑧ Secure JANSI personnel, maintain/improve technical capabilities, and consider how to conduct works in response to environmental changes.



Critical Success Factor	Main Action
1. Fostering of healthy safety culture	(1) Lead the awareness raising of operators as the main actor of self-regulation (2) Support the safety culture fostering activities (3) Determine/develop organizational effectiveness to maintain and continue high performance
2. Operation of voluntary continuous improvement foundation program	(4) Pursuit of world's excellence (5) Effective/efficient implementation of high-quality PR (6) Maturing and effective utilization of PMCM (7) Continuous improvement of Plant Integrated Assessment (8) Improvement of OE activities (9) Prompt and appropriate response to important issues
3. Securing/developing personnel necessary for business operations	(10) Enhance and implement leadership training, seminars, etc.
4. As a self-regulatory organization, enhance/strengthen the foundation of functions, awareness, technical capabilities, etc., and implement effective/efficient activities	(11) Establish foundation as self-regulatory organization (12) Collaboration with domestic and overseas related organizations & Building trusting relationships, etc.
【Important issues to be addressed in the near future】	(13) Long-term shutdown plant support & restart support (14) Support for nuclear fuel cycle facilities
【Other: Tasks separated from Main Actions】	○ Task for Operation Supervisors Certification Exam/Accreditation

Common Goal: Improving Nuclear Safety



Relationship with the NRA

- Although self-regulatory activities and national regulatory activities are independent from each other, they aim to build a relationship that generates synergistic effects.
 - Information sharing on operating experience information (OE information) is underway
 - Careful discussions are being held on the mechanism for sharing information with the NRA including the peer review reports, while considering the business environment.

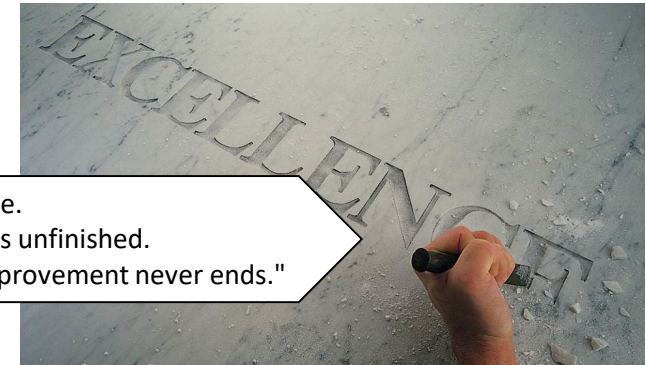
Relationship with Industrial Organizations

- Mutual cooperation with ATENA, NRRC, etc.
 - Concluded technical cooperation agreements with ATENA and NRRC, and have implemented: attendance at each other's conferences, information sharing, mutual business support, collaboration to solve important issues in the industry, etc.
 - Information has been shared with other organizations such as Japan Atomic Industrial Forum and Japan Electrical Manufacturers' Association as appropriate.

Relationship with INPO (Institute of Nuclear Power Operations)

- As self-regulatory organizations with the same vision of "pursuing the highest level of performance," INPO and JANSI mutually cooperates on behalf of the operators of the US and Japan on the issues of improving safety of nuclear power plants.
 - Benchmarking visit to US power plants
 - Exchange of opinions between the US and Japanese nuclear industries regarding the reflection of Fukushima Daiichi lessons learned

Reprinted from the INPO website.
The word "EXCELLENCE" remains unfinished.
It is a symbol of "The road to improvement never ends."



Relationship with WANO (World Association of Nuclear Operators)

- Although WANO and JANSI are independent organizations, they cooperate with each other to improve the safety of nuclear power plants by taking advantage of their respective characteristics. JANSI closely cooperates with WANO Tokyo Center.
- JANSI strives to grasp and pursue international standards for world's excellence and evaluation/support methods.
 - From JANSI: Dispatch reviewers to WANO peer reviews, provide PI information of domestic operators, etc.
 - From WANO: Dispatch overseas peer reviewers, etc.
- JANSI peer reviews are recognized as equivalent to WANO, and equivalence is exercised about once a year, replacing WANO peer reviews on behalf of WANO.

Based on the reflection on the Fukushima Daiichi accident, JANSI drives the operator activities and pursue world's excellence beyond the regulatory framework.

For this reason, JANSI top executives directly informs the CEOs of the operators about the areas for improvement and encourages improvement.

【Peer Reviews】

- **Directly present peer review results (areas for improvement, etc.) to the operator CEOs**
(Regarding common issues, the content will be shared at the CEO session (a place for exchanging opinions exclusively for the operator CEOs, hosted by JANSI))

【Safety Culture】

- **Directly present the safety culture diagnosis results to the operator CEOs**

【Power Plant Integrated Assessment】

- **Present the integrated assessment results (5-grade evaluation) at the CEO session (Peer pressure)**

【Recommendation for safety improvement measures】

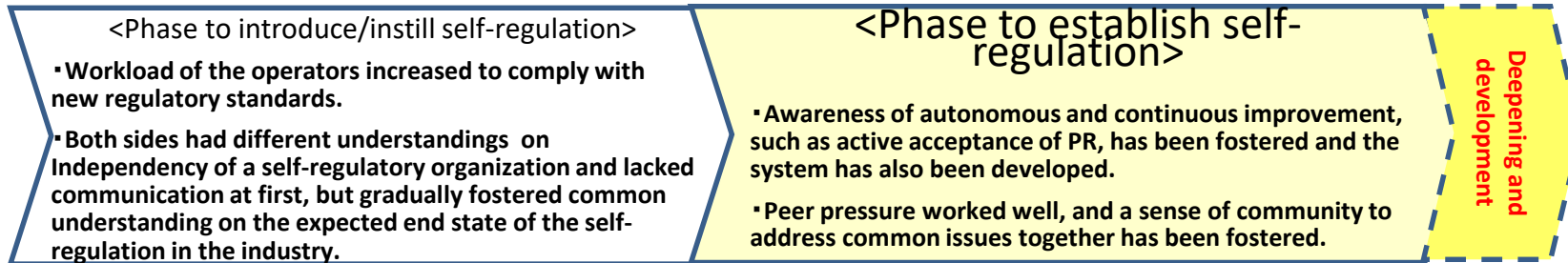
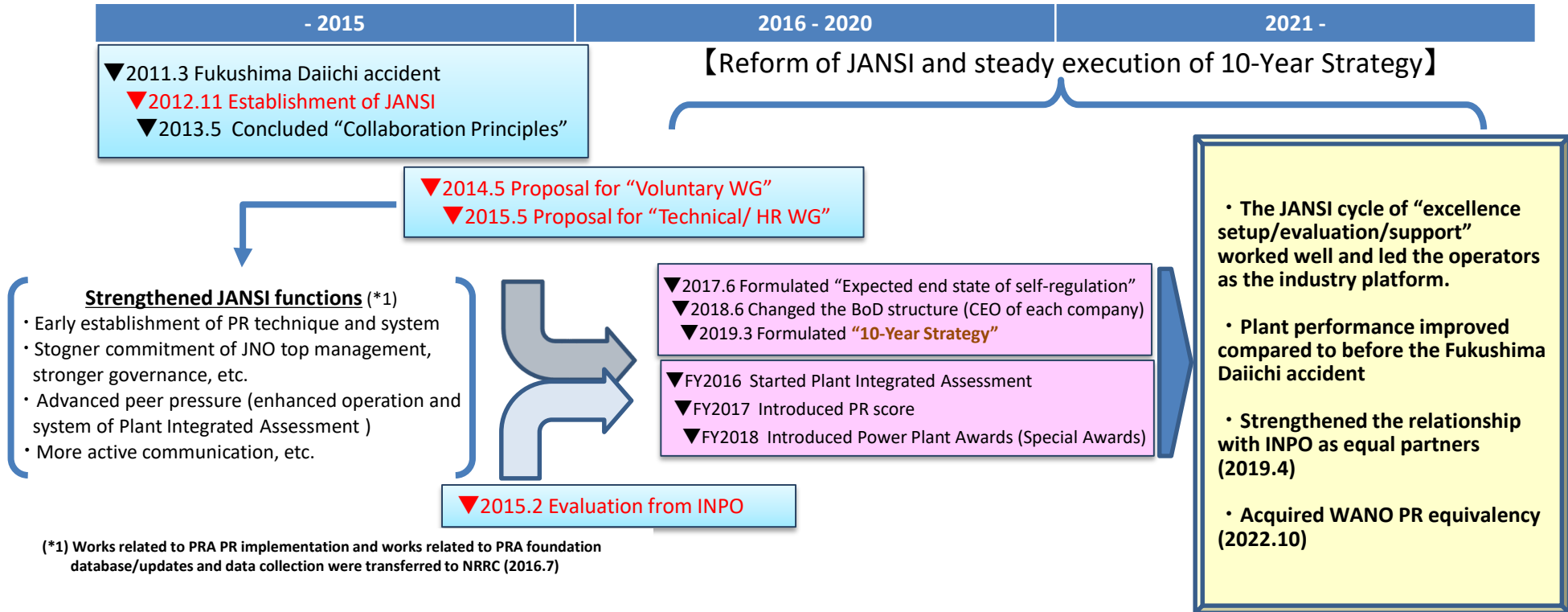
- **Directly present the consideration of safety improvement measures to the operator CEOs**

【CEO session, CEO training, Dialogue】

- **Direct exchange of opinions with the operator CEOs toward the realization of self-regulation**

- In order for peer reviews, safety culture diagnosis, and various support activities to be continuously effective, it is important to maintain a sound environment surrounding these activities.
- Frank dialogue with the operators is indispensable for observing/evaluating the operator performance, and its content is maintained on the premise that it is kept private and used productively.

(Ref) Reform of JANSI and Enhancement of Activities



Status of Main Activities

Peer Reviews (1)

- Conducted 33 times (including Hamaoka) since the founding of JANSI (2012).
- Conduct JANSI/WANO peer reviews alternately.
- Concluded MOU with WANO-Tokyo Center (TC) on the exercise of equivalency (exercised equivalency for Shika PR in FY2023 3Q)

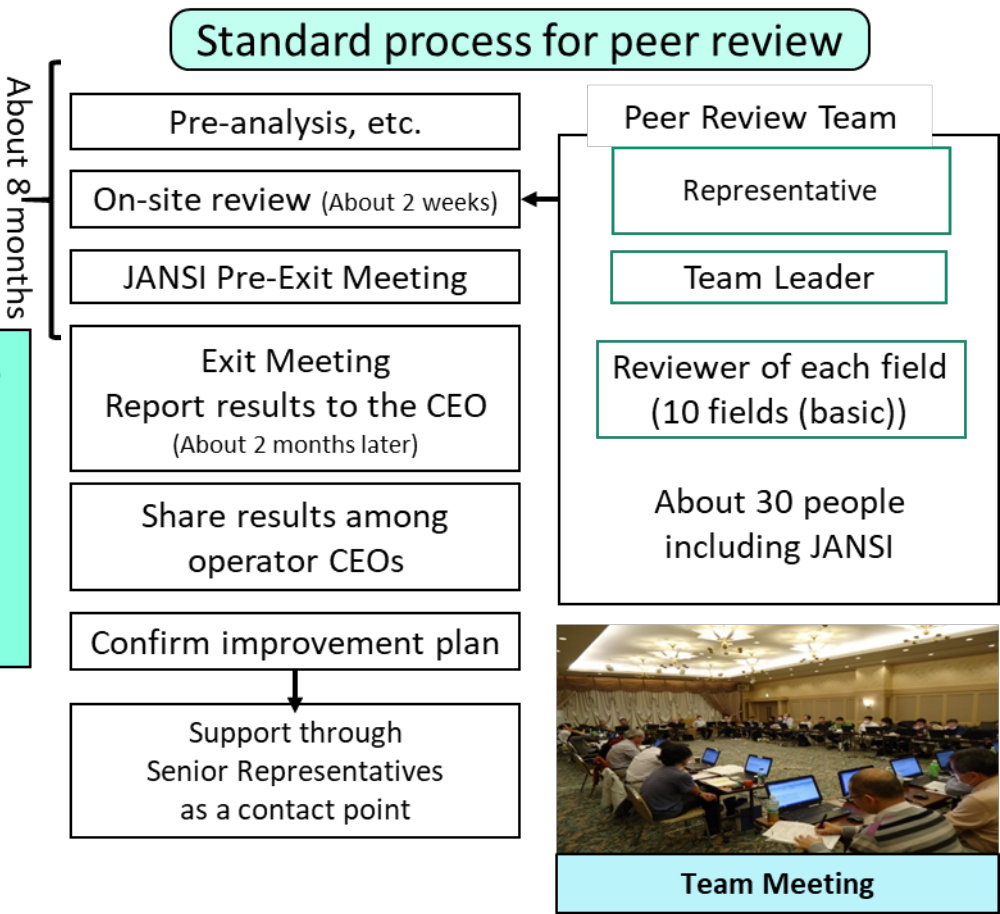
<The Role of JANSI Peer Reviews>

- Evaluate **all activities that affect safety** of the operators
- **Communicate to the JNO leaders** about performance status such as AFI, good practices, etc.

<Requirements for Effective Peer Reviews>

- **Relationship of trust with the station** is a prerequisite (interview content, reports, and other information will not be disclosed)
- Conduct **objective and critical review that will lead to improvements**

- Direct JNO to self-improvement through **peer pressure**
- Improvement by continuous involvement through **evaluation and support**



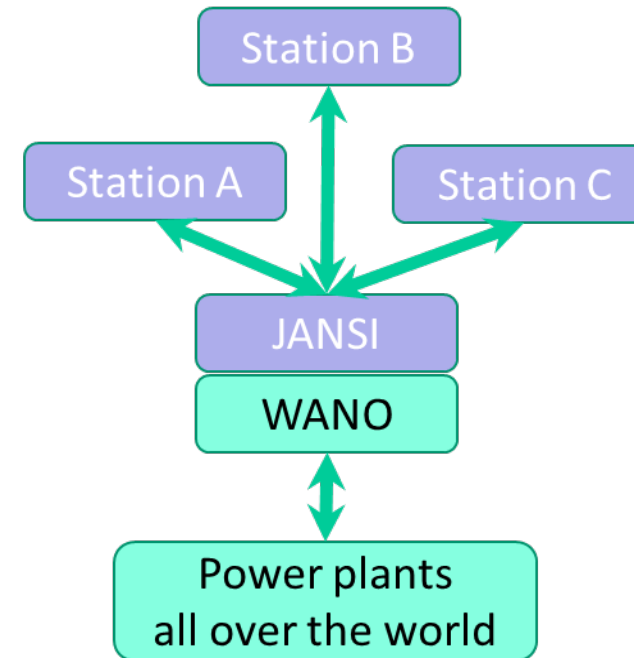
Peer Review Track Record of the Past 3 Years			FY2023
FY2020	FY2021	FY2022	
Ikata Tokai Daini (Onagawa and Tomari were postponed due to COVID-19 pandemic)	Onagawa Ohi Takahama Genkai	Mihama Shimane Tomari Sendai Higashidori	Tsuruga Shika Hamaoka

Note : Recorded in the year in which the peer review was conducted at plant

- Based on the result of Feasibility Study of the mechanism for constantly grasping power plant performance, the Board of Directors approved the collaborative implementation of PMCM (Performance Monitoring & Continuous Monitoring) by JANSI and ePM (enhanced Performance Monitoring) by WANO. (Mihama: already transferred to full-scale implementation in May 2023 from partial trial; Ikata and Sendai: started implementation by collecting PIs in October 2023.)
- Establish PMCM guidelines, revise procedure manuals, and create PMCM booklet.

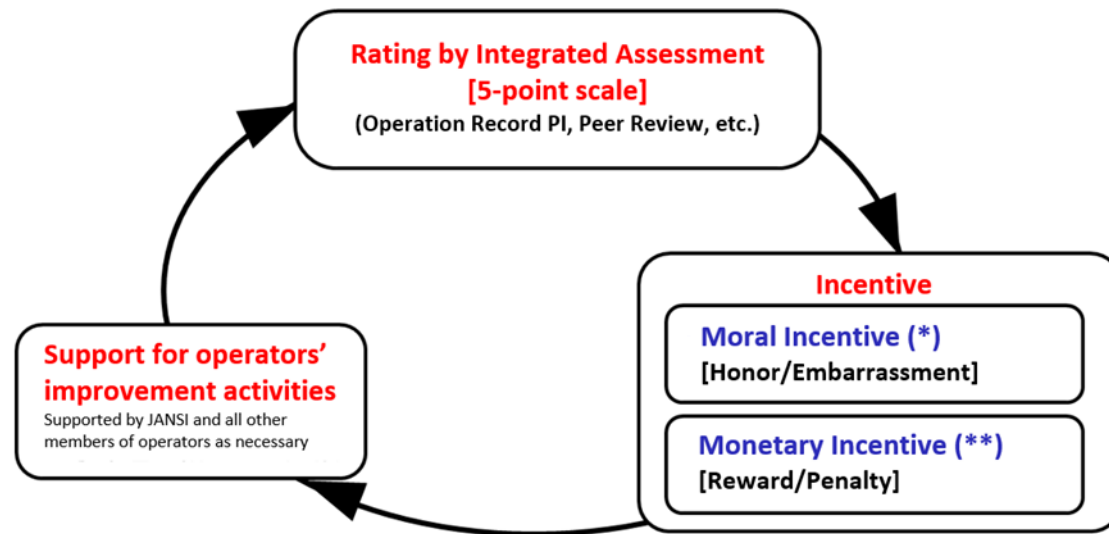
Aim

- Collect plant performance indicators and factor indicators at each station on a regular basis
- Aggregate data from each station to JANSI
- Early detection of deterioration trends by trend monitoring of factor indicators, etc.
- Comparison with other stations
- Utilities take the lead and **make improvements on their own**
- JANSI **provides comprehensive evaluation and timely support** based on expertise and experience in each field
- **Collaborate with WANO and support stations effectively and efficiently including international perspectives**



Plant Integrated Assessment

- Started Plant Integrated Assessment in FY2016
- Conducted the Assessment based on the plant performance in the previous fiscal year, and shared the information in CEO Session
- Gave the Power Plant Awards (Special Awards) (2018: three plants; 2019: one plant; 2020: three plants; 2021: N/A; 2022: one plant; 2023: the two plants mentioned below)
 - Kansai Electric Mihama NPP “Advanced initiatives for performance monitoring”
 - Kyushu Electric Sendai NPP “Active initiatives regarding fire preventive measures in the entire plant”



(*) Commend excellent stations in front of all utility CEOs
 (**) JANSI membership fees are at a premium or discount according to the comprehensive evaluation results

Share information among all CEOs and recognize stations with Power Plant Awards



【Restart Assistance】

- Continue support from restarted plants (acceptance of secondees (operating staff) from long-term shut down plants, operator experience training in operating plants)
- As the restart assistance for BWR plants, conduct review of the pre-restart check plan.
- Conduct joint opinion exchange meeting between preceding PWR plants and BWR plants regarding sequence training.

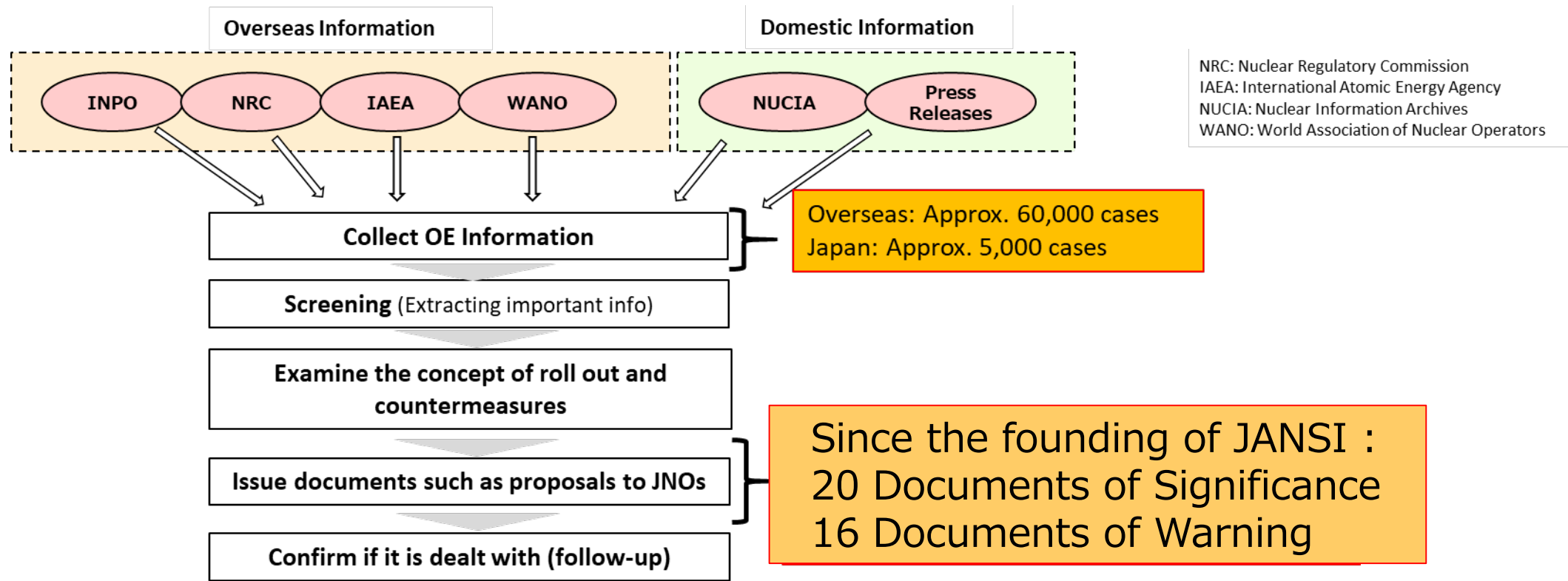
【JNFL Support】

- As individual support after the completion of special support activities, RM Team (support for RM system), CAP/Trouble Team (support for improvement of cause analysis ability), and CM Team (introduction of initiatives to address issues and good practices in CM-WG) have provided the support.

【Other Support (related to release of treated water by ALPSs of Fukushima Daiichi)】

- JANSI is conducting review (confirmation of document, on-site observation/interview) from the perspective of eliminating factors that would hinder the accurate release of ALPS treated water into the ocean (from January 2023).
- Based on the review result, JANSI presented the “findings” to TEPCO HD.

- Analyze domestic and overseas OE information, propose countermeasures as necessary and monitor JNO actions
- Register Japanese OE information in the public database (NUCIA), and require all stations to take action uniformly as needed.



➤ On-site diagnosis:

On-site diagnosis is designed to observe and analyze the target company from multiple perspectives in terms of organizational culture, and to provide a diagnosis from an independent and objective standpoint as to how this relates to the maintenance and improvement of performance, including safety.

The purpose is to provide an opportunity for the company itself to better recognize its own state in relation to safety, and to enhance its learning ability as an organization striving for safety excellence.

- In 2007, the diagnosis was started targeting NPPs, and expanded the target to fuel fabrication companies and plant manufacturers, implementing at about 6 sites/year
- In 2013, it started explaining evaluation results directly to CEOs and CNOs
- In 2018, the concept of a systemic approach was introduced to evaluation
- In 2020, the subject of interview was expanded to CNOs and corporate office members

➤ Safety Culture questionnaire:

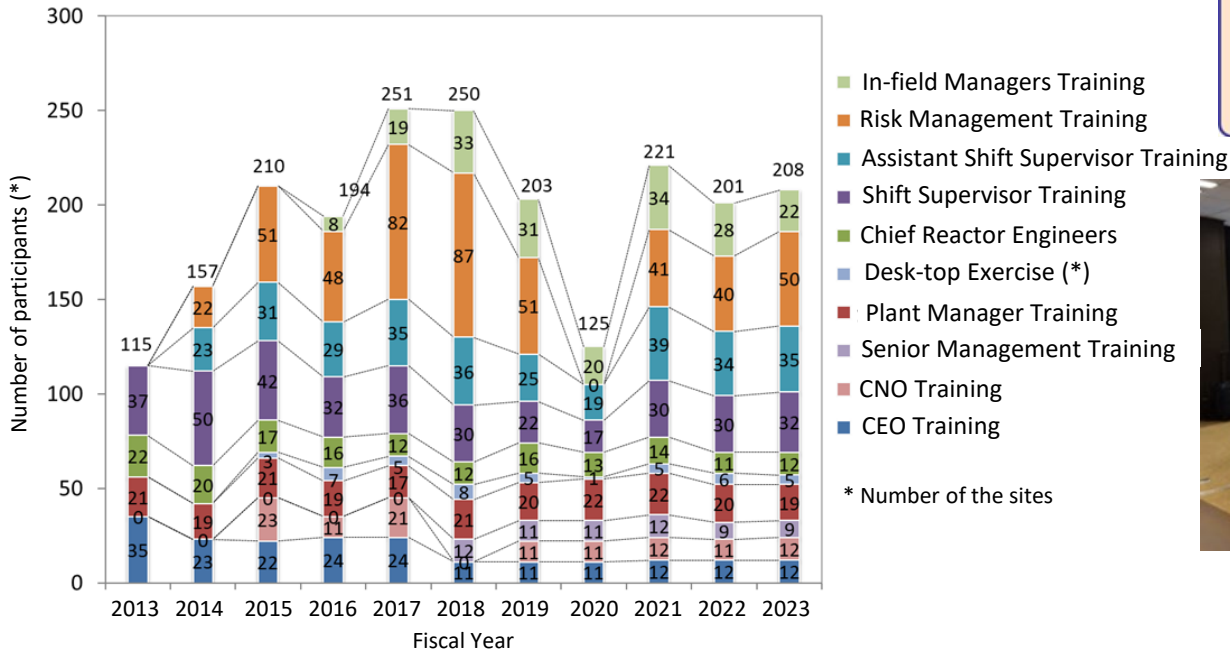
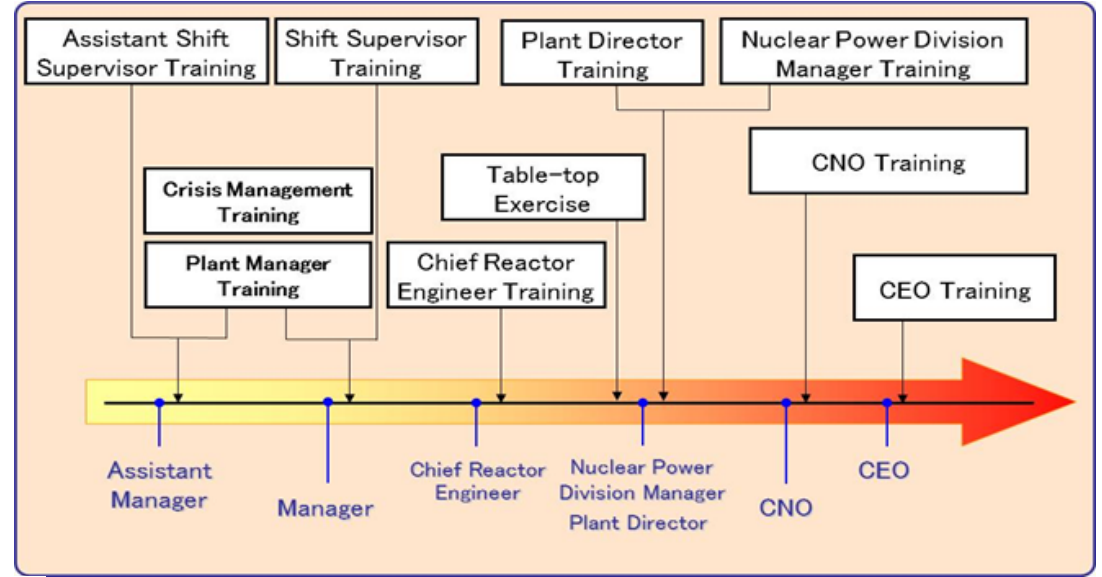
Safety Culture questionnaire, through analysis of survey responses, makes it possible to grasp trends, make relative comparisons between departments within member site, and compare between management levels within site. As a result, it will be possible to clarify focus areas that need to be addressed in the future by the operator organizations, and utilize for the voluntary improvement of safety culture of the utilities.

• About 80 questions were answered by each management level of utilities. (The 7th questionnaire involved 32 members, 81 sites, about 25,000 people)

- From 2002 to 2004, the first awareness survey on the safety climate of workplace was conducted, and the survey has been conducted every three years thereafter
- In 2009, the survey was named Safety Culture Questionnaire from the 3rd survey, and the "7 Principles of Safety Culture of JANSI" were applied.
- In 2021, started application of 10 Traits (IAEA version) (in the 7th survey)

Leadership Trainings

- JANSI provides trainings to foster the awareness prioritizing nuclear safety and to acquire non-technical skills such as leadership, communication and teamwork.
- There are 10 training courses for managers according to their positions (CEOs, CNOs, Plant Managers, Shift Supervisors, etc.)

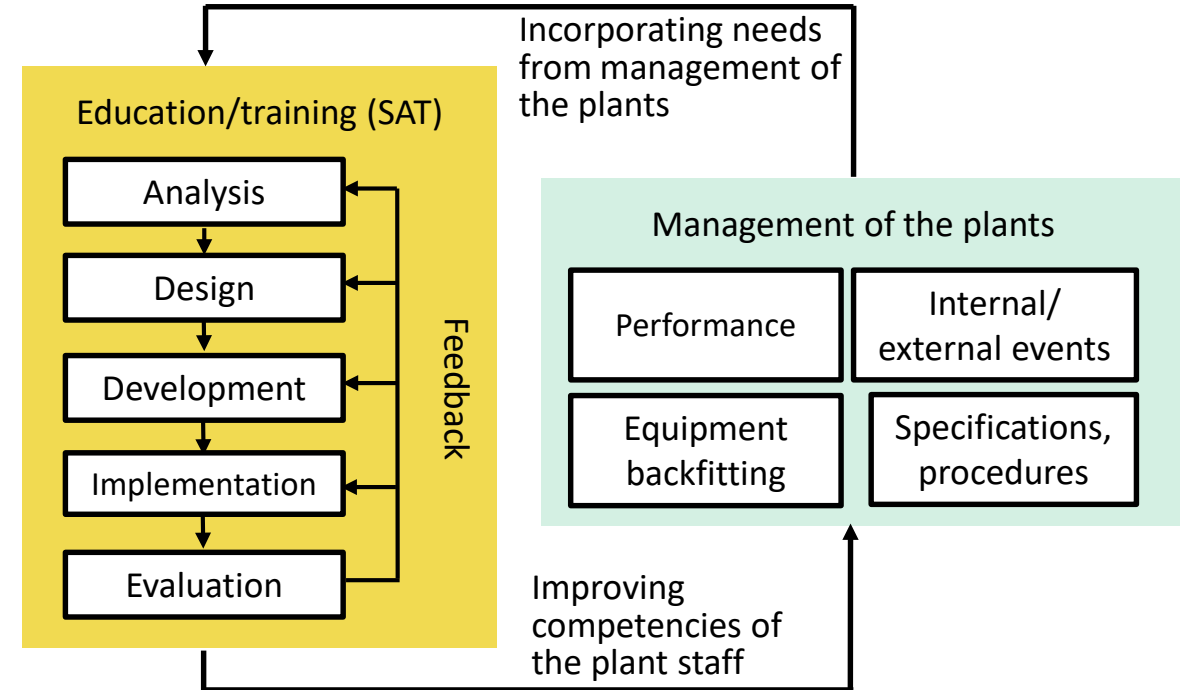


Note: Some training was cancelled due to the COVID-19 pandemic in FY2019 and FY2022.



➤ In order to improve effectiveness of the training implemented by the operators, JANSI supports them to introduce SAT (Systematic Approach to Training) by developing guidelines, providing training, implementing plant caravans, holding workshops, etc.

- In FY2020, started support activities (caravans) according to the statuses of the plants
 - FY2020: 6 companies
 - FY2021: 11 companies
 - FY2022: 11 companies
 - FY2023: 8 companies
- In FY2022, started the workshop where the operators learn with each other
- Held the issue study meeting themed on OJT
- Held the basic course for training design (1st session)



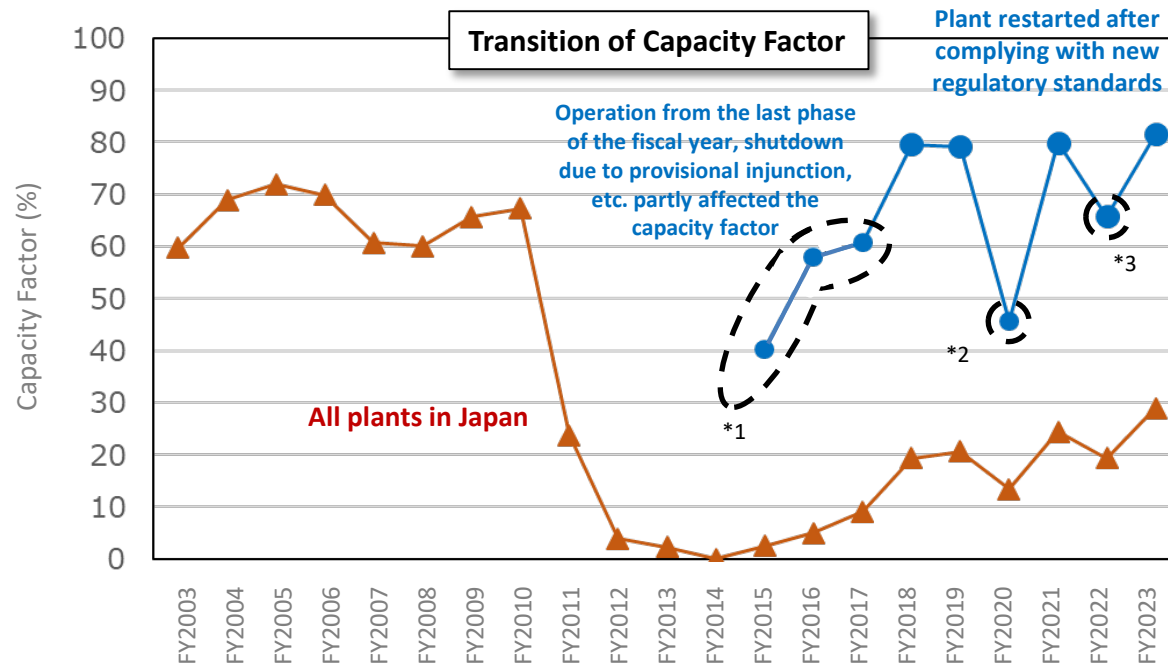
JANSI holds the “JANSI Annual Conference” to report on the results of its activities, and to receive opinions from domestic/overseas nuclear community in order to make future activities more effective.

Track Record of the Past 3 Years

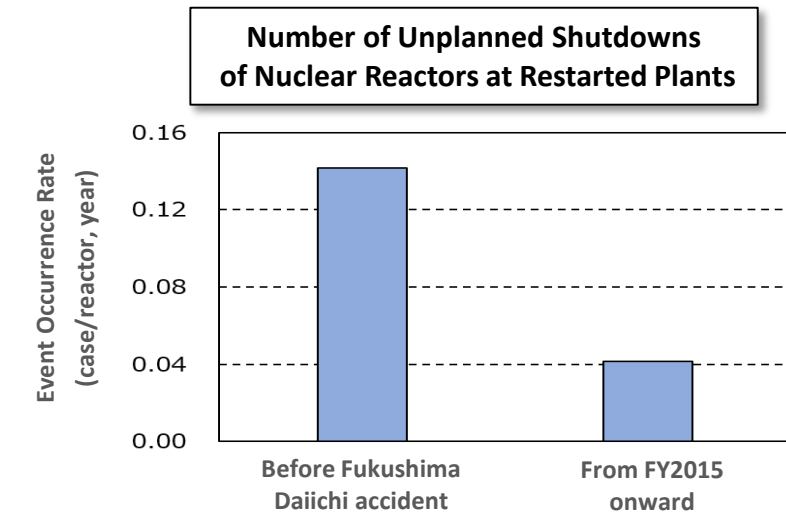
Event Date	2022.3.23	2023.3.15	2024.3.13
Number of Participants	Approx. 600 (Held Online)	Approx. 500 (Held Venue and Online)	Approx. 500 (Held Venue and Online)
Panel Discussion	<p><u>Enhancement of Resilience in Nuclear Safety - New Perspective for Plant Operation -</u> Chairperson: Ms. Kyoko Oba (Deputy Chief Engineer, Japan Atomic Energy Agency (JAEA) / Associate Professor, Nagaoka University of Technology) Dr. Erik Hollnagel (Professor Emeritus, Linköping University / Ecole des Mines de Paris / the University of Southern Denmark) Mr. Jacques Regaldo (Senior Vice President, EDF / Former Chairman of the WANO) Dr. Kazue Nakajima (Executive Director, Japan Organization of Occupational Health and Safety / Professor, Osaka University Faculty of Medicine) Mr. Keisuke Nagai (Director and President, Shikoku Electric Power Company) Hiromi Yamazaki (President & CEO, JANSI)</p>	<p><u>Expectations, Prospects, etc. of Future Activities</u> Chairperson: Ms. Yukari Yamashita (Managing Director of the Institute of Energy Economics, Japan) Mr. Robert E. Schuetz (CEO, Energy Northwest) Dr. Akira Yamaguchi (Director, Nuclear Safety Research Association / Professor emeritus, University of Tokyo) Mr. Victor M. McCree (Owner & Principal Operating Officer, NucLeader Consulting, LLC / Former Executive Director for Operations for the NRC) Mr. Nozomu Mori (Representative Executive Officer & President, Kansai Electric Power Company) William Edward Webster Jr. (Chairman, JANSI) Hiromi Yamazaki (President & CEO, JANSI)</p>	<p><u>Continuous Improvement: How to extend in Japan</u> Chairperson : Mr. Akio Yamamoto (Professor, Nagoya University Graduate School of Engineering) Mr. Jeff Lyash (CEO, TVA (Tennessee Valley Authority)) Mr. Hiroyuki Yamaguchi (Professor, Kyushu Univ. Graduate School of Human-Environment Studies) Mr. Kingo Hayashi (President and Director, Chubu Electric Power Co., Inc.) Hiromi Yamazaki (President & CEO, JANSI)</p>



- Restarted plants are operating smoothly, with fewer unplanned shutdowns.
- It is considered that restart assistance, evaluation by peer reviews, utilization of OE information, etc. are functioning effectively and contribute to improvement at the restarted plants.



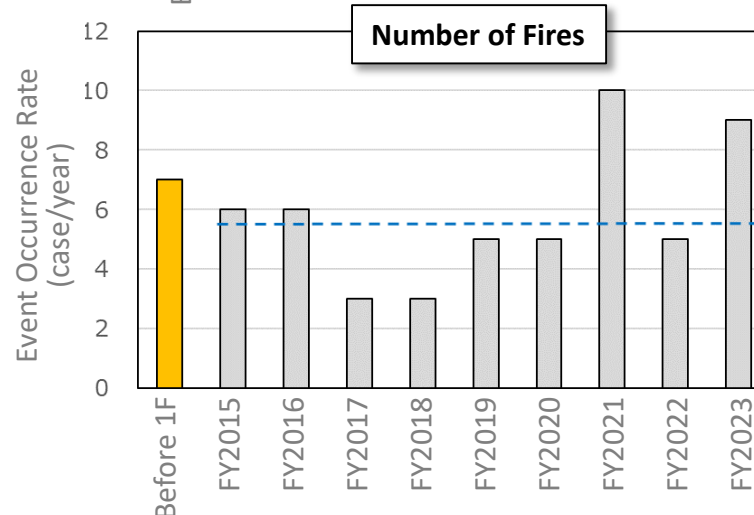
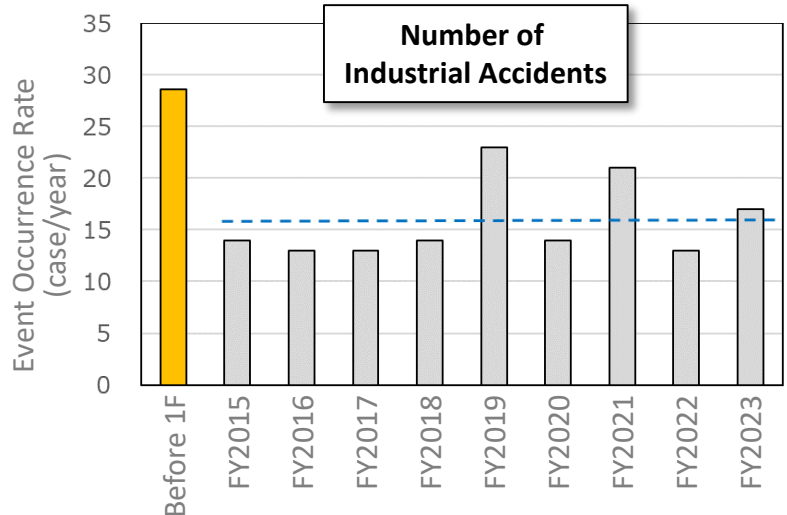
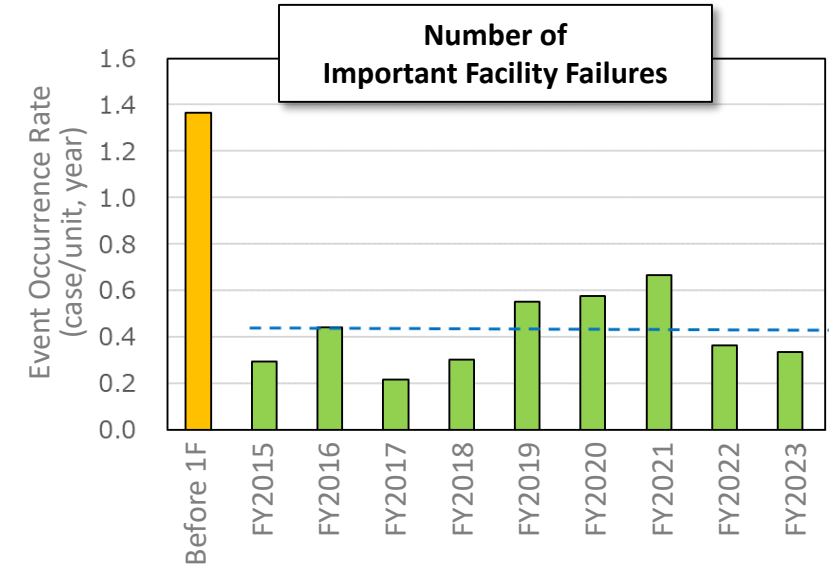
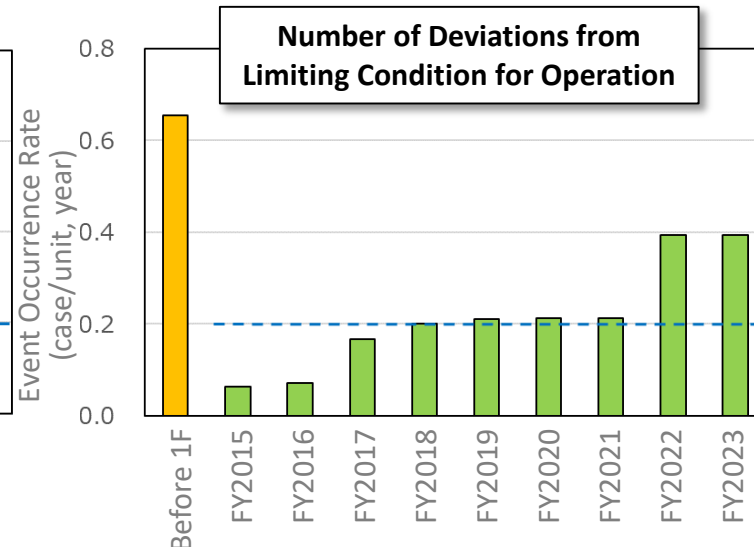
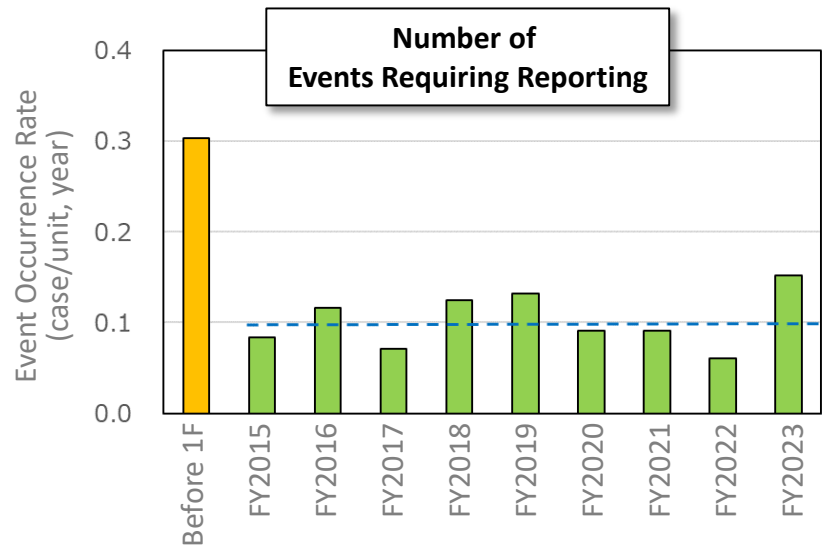
- *1: The capacity factor for FY2015-2017 is low mainly due to operation starting in the middle of the fiscal year (FY2015: Sendai Unit 1, 2, Takahama Unit 3; FY2016: Ikata Unit 3; FY2017: Takahama Unit 4, Ohi Unit 3, Genkai Unit 3) and shutdown due to provisional injunction to halt operation (FY2015-2017: Takahama Unit 3).
- *2: The capacity factor in FY2020 is low mainly due to specialized safety facility installation work (Sendai Unit 1, 2, Takahama Unit 3, 4) and provisional injunction to halt operation (Ikata Unit 3).
- *3: The capacity factor in FY2022 is low mainly due to specialized safety facility installation work (Genkai Unit 3, 4, Takahama Unit 3, Mihama Unit 3) and PR negative flux rate trip (Takahama Unit 4).



(Source): Japan Atomic Industrial Forum Website, Nuclear Information Archives (NUCIA)
(Note):

- The capacity factor of plants restarted after complying with the new regulatory standards is calculated as the average value of capacity factor since the year of restart (including the shutdown period due to specialized safety facility installation work as well as provisional disposition decision of the court).
- For the number of events from FY2015 onward, the number of events from FY2015 to FY2022, during which time the plant conforming to new regulatory standards was in operation, was extracted.
- For the number of events before the Fukushima Daiichi accident, the number of events from FY2003 (when NUCIA started operation) to FY2010 (when Fukushima Daiichi accident occurred), was extracted.

➤ The number of events requiring reporting based on the laws, etc. is decreasing at all domestic plants.



(Source): Nuclear Information Archives (NUCIA)

(Note):

- For the number of events from FY2015 onward, the number of events from FY2015 to FY2021, during which time the plant conforming to new regulatory standards was in operation, was extracted. (Average values for FY2015-2021 are indicated by the blue dashed line.)
- For the number of events before the Fukushima Daiichi accident, the number of events from FY2003 (when NUCIA started operation) to FY2010 (when Fukushima Daiichi accident occurred), was extracted.
- Limiting condition for operation are stipulated in the nuclear facility safety regulations of each station.
- Important facilities include emergency core cooling system, emergency diesel generator, and reactor containment vessel.

FY2023

Activity Status

(Described in accordance with
the 10-year strategy through
FY2023)

10YS Main Actions	FY2023 Activity Status (Items with ● are related to Highly Focused Activity)
(1) Effective and efficient implementation of peer reviews (PR)	<ul style="list-style-type: none"> ● Steady implementation of station PR (at 3 plants: Tsuruga, Shika, Hamaoka (ongoing)) ● Improve operations by exercising WANO equivalency in Shika PR. ● Participation in WANO-PR (10 personnel/PR), Joint workshops (of TC-TLs and JANSI-TLs) ● Consideration of how future PR should be <ul style="list-style-type: none"> ▪ Set subtasks, performed overseas benchmarking and exchanged opinions with the Plant Managers to consider “how future PR should be” and create JANSI’s rough draft. ▪ The consideration results have been incorporated into the new 10YS.
(2) Strengthen constant monitoring of plant performance	<ul style="list-style-type: none"> ● Start full-scale operations of ePM at 3 plants: Mihama (shifted from partial trial to full-scale operations in May), Ikata and Sendai (started the full-scale operations in Oct.) ● Improve PMCM processes (created the PMCM guidelines, revised the work procedures/information handling procedures, created/revised the PMCM handbook, etc.) ● PI utilization study (develop skills and methods for data analysis: PMCM system improvement study, etc.) ● PMCM effectiveness evaluation (collected plant performance data: WANO-PI/Voluntarily-set Common PI) ● Consideration of how future PR should be (the results have been incorporated into the new 10YS)
(3) Continuously improve and conduct Integrated Assessment for nuclear stations	<ul style="list-style-type: none"> ○ Implement/improve Plant Integrated Assessment (collected the overall evaluation results, deliberated them at Power Plant Integrated Assessment Committee, informed the operators of the result after President&CEO made the final scoring.) ○ Implement Power Plant Awards (Special Award to 2 plants) <ul style="list-style-type: none"> ▪ Kansai Electric Mihama NPP: Advanced initiatives for performance monitoring ▪ Kyushu Electric Sendai NPP: Active initiatives for fire preventive measures in the entire plant ○ Quarterly report on performance indicator (PI) data (4 times/year: sent to the operation committee members, reported to Collaboration Supervisors Meeting)

10YS Main Actions	FY2023 Activity Status (Items with ● are related to Highly Focused Activity)
(4) Upgrade OE tasks and actively provide information	<ul style="list-style-type: none"> ○Analyze domestic and foreign OE and provided utilities with documents according to significance (Documents of Significance: None, Documents of Warning: the following 3 Documents have been issued) <ul style="list-style-type: none"> ▪Warning regarding Tomari NPP EDG automatic shutdown (Jul. 7) ▪Fire prevention regarding electrical equipment, etc. (warning) (Sep. 27) ▪Warning regarding LCO deviation incident due to work schedule mismanagement (Feb. 1) ○Study for improvement and sophistication of OE-related work (Active information sharing/utilization, OE information processing capacity improvement (OE-PI system improvement)) ○Promote preventive activities by instilling the importance of OE activities (At OE Information Review Meeting and Overseas Information Review Meeting, the information was shared with the operators on domestic/overseas OE information including NICS, IER, status of initiatives for providing OE information documents, SOER general training, JANSI-NRA regular information-sharing sessions, etc.)
(5) Strengthen the support for the operators to resolve shared important issues	<ul style="list-style-type: none"> ○Support for resolving important issues identified in PR, etc. (periodic SR visits, TCP supports) ○Strengthened other support for utilities (OP, FP, MA, RPCY, ES, EP) <ul style="list-style-type: none"> ▪Support through TPT, Mid-loop Information Liaison Meeting, FP Review Meeting, Emergency Drills Review Meeting, etc. ○Other support activities (technical support for the Fukushima Daiichi treated water release: OP,MA/WM,CY) ○Excellence Guidelines update and sharing in the industry (common to each area)
(6) Provide support for autonomous safety activity programs	<ul style="list-style-type: none"> ○CAP: Held several information-sharing meetings ○CM: including EQ management <ul style="list-style-type: none"> ▪Support through CM-WG (held 4 times), EQ Review Meeting (held twice), and EQ Working Group (held 3 times), held the EQ seminar ○Voluntarily-set Common PI: included in Main Action (2) ○Risk Sensitivity Training : Provided for 6 sites
(7) Provide support for restarting plants	<ul style="list-style-type: none"> ●Support for plants preparing for restart (held the opinion exchange session jointly with 3 plants (Shimane, Onagawa, KK), visited plants to confirm the status of preparation for restart, made report on JANSI restart support at FEPC Restart Acceleration Task Force, etc.)

10YS Main Actions	FY2023 Activity Status (Items with ● are related to Highly Focused Activity)
(8) Provide support for reprocessing and other facilities	○Special support had been ended in FY2022 (support upon requests through SR/TCP) ・As individual support after the special support ended, RM group (support for RM system), CAP/Trouble group (support for improvement of cause analysis ability), and CM group (introduction of initiatives for addressing issues and good practices at CM-WG) provided support.
(9) Strengthen oversight function including corporate offices	○Diagnosis of safety culture including the corporate offices: included in Main Action (10) ○Support for establishing the risk management (RM) system including the corporate offices, study/establishment of organizational effectiveness assessment ・Meeting (held 4 times) ○Participated in WANO CPR (2 utilities)
(10) Upgrade safety culture diagnosis method and conduct of it	○Implement the safety culture diagnosis (5 sites) ○Support for fostering/improving the safety culture ・Support for the self-assessment (4 operators), implemented safety culture fostering seminars (basic/follow-up, hands-on) and safety caravans (4 operators), held lectures upon requests from the members (2 operators). ○Sophistication of safety culture diagnosis related work (collaboration with domestic/overseas related organizations) ・Held the JEA seminar and the lecture for overseas trainees at the Wakasa Bay EC, participated in IAEA-TM. ○Share the information on the safety culture diagnosis and PR and collaboration
(11) Summarize safety improvement tasks and provide support	○Develop the evaluation methods for enhanced safety measures, etc. ・Overall summary of FY2022 proposal follow-ups was reported at Collab. Supervisors Mtg., CNO Mtg. Board Mtg. in Apr./May. Consolidated result of FY2023 proposal follow-ups/policy for explaining at BM, etc. were explained at Nuclear Safety Experts Meeting (Mar. 22) to hear opinions. ○Development of safety measures evaluation basis ・With regard to issues found by JANSI, the study results of the latest information on safety improvement measures taken at overseas plants were introduced to the personnel in charge at explanatory sessions, etc. to hear opinions and promote the improvement measures. The outline of the explanatory sessions was shared at Nuclear Safety Experts Meeting (4 times/year). ○Utility support activities (With regard to holding of seminars, etc. on the evaluation method and evaluation results, etc. based on the overall summary of the SRS-46 evaluation, explanation was made on the activities plan for supporting the operators, etc. at Nuclear Safety Experts Meeting (Dec. 22, Mar. 22))

FY2023 Activity Status (Main Actions : 4/6)

10YS Main Actions	FY2023 Activity Status (Items with ● are related to Highly Focused Activity)
(12) Implement Leadership Trainings	<ul style="list-style-type: none"> ○Effective and well-planned implementation of Leadership Trainings (CEO Training, CNO Training, Nuclear Power Division Manager Training, Plant Manager Training/Follow-up training, Chief Reactor Engineer Training/Follow-up training, Crisis Management Training, Shift Supervisor Training (3 times), Assistant Shift Supervisor Training (3 times), In-field Manager Training (twice)/Follow-up training, Senior Staff Training (trial for the implementation in FY2024)) ○Effective use of on-demand training <ul style="list-style-type: none"> ▪The video material recording the lecture for looking back the Fukushima Daiichi accident used at Chief Reactor Engineer Training has been made usable as the training material. ○Enhancement of table-top exercise (creation of a new exercise scenario) <ul style="list-style-type: none"> ▪Implement the exercise at five plants. A new training scenario was considered based on the operators' needs. ○Development and reasonable implementation of non-technical skill training to a wide range of utilities <ul style="list-style-type: none"> ▪The training was implemented for 9 companies in response to their requests received separately. ○Grasp utility needs through feedback from trainees, training promotion working group, etc., and make improvements
(13) Promotion and adoption of SAT method	<ul style="list-style-type: none"> ○Implementation of station caravan <ul style="list-style-type: none"> ▪Support works were provided for 8 companies in response to the requests received separately. ○Support for autonomous improvement activities including workshops and benchmarking <ul style="list-style-type: none"> ▪The issue review meeting was held for the themes of the SAT workshop and OJT (Dec. 11-12). ▪Basic course for training design was held (Dec. 13-14). (as a part of the strategic works under the new 10YS)
(14) Incorporate Fukushima Daiichi lessons learned	<ul style="list-style-type: none"> ○Utilization of video materials for remembering the Fukushima Daiichi accident (in leadership trainings, JANSI staff trainings, etc.) <ul style="list-style-type: none"> ▪Rented the video materials the operators upon request. ▪The accident was looked back in Leadership Training. (the lectures were provided by those who had experienced the accident as the personnel in charge, etc.)
(15) Foster ownership of self-regulation among utility leaders through dialogues	<ul style="list-style-type: none"> ○Deliver messages through Board Meeting, etc. (5/18 BM, 6/15 General Assembly/Extraordinary BM, 3/14 BM) ○Develop leadership as main actor of self-regulation (dialogue between 3 new CEOs/5 new CNOs and JANSI President&CEO, 9/14 CEO Training, 11/16 Plant Manager Training, 2/7 CNO Training) ○Direct dialogue with stations by JANSI executives (In addition to the interviews with 2 new Plant Managers, direct dialogues with the Plant Managers were held in Joint Assessment) ○Communication to the front-line workers via various contents (Issue "JANSI ACTIVITIES" 6 times/year, etc.)

10YS Main Actions	FY2023 Activity Status (Items with ● are related to Highly Focused Activity)
(16) Support the utilities by providing documents of significance in the time of emergency	<ul style="list-style-type: none"> ○ Help utilities during emergency by issuing Documents of Significance, etc. ① Cooperated with the operators and WAN-TC and participated in the training by the operators/WANO (at Tsuruga on Dec. 8) ② In order to issue Documents of Warning and Documents of Significance in a timely manner, JANSI has been keeping the necessary documents (Operational Safety Program, installation permits) always in order (continued)
(17) Secure medium and long-term human resources and develop training program	<ul style="list-style-type: none"> ○ Securement of mid- to long-term human resources (Acceleration of current initiatives) <ul style="list-style-type: none"> ▪ Strong request for HR based on the report on “Issues in and response to HR securement” at Board Meeting, etc., consideration for extension of continued employment to age 70, new graduates hiring (for 2024, 2025), etc. ○ Capability development and adequate allocation of staff (Strengthen current initiatives) <ul style="list-style-type: none"> ▪ Development of new graduates to make them reliable workforce, implementation of step-up training, implementation of training to remember the 1F accident for JANSI staff, etc. ○ Knowledge sharing within JANSI using knowledge management (KM) system (Strengthen current initiatives) <ul style="list-style-type: none"> ▪ Confirmation of KM utilization status (questionnaire, consideration of countermeasures, system updates)
(18) Raise awareness as self-regulatory organization by the executives	<ul style="list-style-type: none"> ○ Small group dialogue (with JANSI top management (President&CEO) (11 times, 44 staff), issued President&CEO message every time) ○ Employees Awareness Survey (implemented the awareness survey) <ul style="list-style-type: none"> ▪ Implemented the questionnaire during May 15 and 31. (collection ratio: 96.5%)
(19) Strengthen cooperation with stakeholders to exercise synergy effect of nuclear safety	<ul style="list-style-type: none"> ○ Increasing collaboration with NRA to demonstrate synergy effect in pursuing nuclear safety <ul style="list-style-type: none"> ▪ Regular OE Information Exchange Meeting (4 times), greetings to NRA and Commissioners, interviews with NRA ○ Continued activities to promote understanding for ANRE (METI) and other important stakeholders <ul style="list-style-type: none"> ▪ Interviews with ANRE, response to nuclear energy subcommittee organized by METI (Feb. 20) and Domestic Advisory Committee (Sep. 13, Mar. 11), issuing JANSI On-Line 4 times (April Issue, July Issue, October Issue, January Issue) ○ Enhance collaboration with ATENA and NRRC <ul style="list-style-type: none"> ▪ ATENA (collaborative coordination meeting, WG responding to OE, etc.), NRRC (engineering cooperation meeting, information liaison meeting, etc.) <p>Activities to raise public acceptance</p> <ul style="list-style-type: none"> ▪ JANSI open website, communication through Annual Conference, appropriate dialogues with the persons involved

10YS Main Actions	FY2023 Activity Status (Items with ● are related to Highly Focused Activity)
(20) Build cooperative relationships with WANO, INPO and other external organizations	<p>○WANO (participated in World Governing Board Meeting, TC Board Meeting, WIO Meeting, discussed with Chairman Mitchell who visited JANSI on JANSI-WANO cooperation (Sep. 29), etc.)</p> <p>○INPO (held the information-sharing session for establishing an INPO-JANSI engineering supportive relationship (Jun. 29), Japan-US CNO Leadership Meeting (Aug. 27-30) and INPO-JANSI executive information-sharing session (Aug. 30), INPO CEO Willard visited JANSI and participated in CEO Training (as a lecturer), etc. (Sep. 11-14), participated in INPO CEO Conference (Nov. 7-8), and others)</p> <p>Concluded a new cooperation agreement (for Apr. 2024 –Mar. 2029) following the expiration of the current agreement (on Mar. 19)</p> <p>○EDF (visited France, held the information-sharing session with EDF (on Combined PR, acquisition of equivalency, etc.) (on Jun. 20), reported the equivalency-exercised PR result (on Mar. 19))</p> <p>○International organizations including IAEA, OECD/NEA (introduced JANSI survey activities at the OECD/NEA GIC Workshop (on the request of NRA, shared with ATENA/FEPC) (on Nov. 14-16), and others)</p> <p>○International Advisory Committee (had interview session with each committee member to discuss on JANSI 1H results, etc. (in Oct.-Nov.), held the International Advisory Committee (safety culture diagnosis, leadership training, OE initiatives) (on Mar. 14))</p>

FY2023 Activity Status (Technology Basis)

Technology Basis	FY2023 Activity Status
(A) Support with making the most of foundational technical information	<ul style="list-style-type: none"> ○Development of core internals inspection and evaluation guidelines (issued new 3 guidelines) ○Support related to hydrochemistry (as for the outsourced work, the interim report was made in Oct. and the final report was made in March) ○Support through lectures on basic safety principles, etc. (the lecture to deepen the understanding was held (on Nov. 14))
(B) Development of maintenance technology basis	<ul style="list-style-type: none"> ○Development of industry-common maintenance technical basis and dissemination of it ①Improvement of maintenance information library (concluded an outsourcing agreement to outsource the work) ②Maintenance/Enhancement of database (the maintenance information library has been being maintained and updated) ③Enhancement of on-site engineer network activities (an outsourcing agreement was concluded to outsource the works to continue supporting the meeting secretariats, implemented as planned for Maintenance Base Development Committee and the affiliated 10 meeting bodies) ④Maintenance/Management of deterioration mechanism (issued the deterioration mechanism table Rev. 12) ⑤Understand utility issues and support improvement activities (considered on the future holdings of the platform utilization explanatory session) ○Support for revision of JEAC4209 rules
(C) Support for Nuclear Safety Management System (SMS)	<ul style="list-style-type: none"> ○SMS issues study meeting (see Main Action (6)) ○Internal audit review meeting, Human Factor (HF) study meeting ○Trainings for human performance improvement (HPI) (basic training, advanced training, specialized training) ○Survey on precedents in Japan and overseas ○Safety awareness poster: issued 3 types of the poster (No. 40-42) on the theme of HP tool
(D) Manufacturers support	<ul style="list-style-type: none"> ○Reliable implementation of manufacturer PR (at 3 locations: implemented at NFI and JAEA Nuclear Science Research Institute, and as for GNJ-J, kicked off in Jan. and the actual review will be implemented in June)
(E) Operation Supervisors Certification tasks	<ul style="list-style-type: none"> ○Implementation of examinations (4 times a year) ○Support for building a system for mutual dispatch of BWR operating staff (practical training according to position) (BWR started development of comprehension check common questions based on NUREG-based standard KSA catalogs) ○Hands-on training in operating plants (implemented by dispatching the personnel from 9 plants)

1. The new 10-Year Strategy

- (1) JANSI made discussions on the new 10-Year Strategy in FY2023 which is the middle year of the current Strategy.
- (2) Reviewed the current Future Visions → Identified critical factors to achieve the Future Visions (Critical Success Factors) → Set JANSI Main Actions which would contribute to CSFs → Developed a 10-year plan for each Main Action (including budget/personnel) → Extracted the FY2024 plan from the 10-year plan as “FY2024 Business Plan”.

2. Status of FY2023 activities pertaining to the foundation of organizational management

- (1) With the lowering of the new type 5 coronas, the company moved to routine infection prevention measures and systematically promoted new ways of working.
- (2) Implementation of self-assessment and internal audit

3. Meeting status related to the Articles of Incorporation

- (1) General Meeting of Members 1 time
- (2) Board Meeting 5 times
- (3) Associate Special Member Representative Meeting 1 time
- (4) Domestic Advisory Committee Meeting 2 times
- (5) International Advisory Committee Meeting 1 time

References

The list of JANSI Board Members

Director/Auditor	Name (titles omitted)	Affiliation
Director, Chairman	William Edward Webster Jr.	
Representative Director, President & CEO	Isao Kato	
Director	Kazuhiro Ikebe	President and CEO, Kyushu Electric Power Co., Inc.
Director	Hitoshi Kanno	Representative Director President and Chief Executive Officer, J-Power
Director	Tomoaki Kobayakawa	Representative Executive Officer and President, TEPCO Holdings Inc.
Director	Susumu Saito	President and Director, Hokkaido Electric Power Company
Director	Yoshihiro Miyamoto	Director and President, Shikoku Electric Power Company
Director	Kengo Nakagawa	Representative Director, President & Senior Managing Executive Officer, Chugoku Electric Power Company
Director	Kingo Hayashi	President and Director, Chubu Electric Power Company
Director	Kojiro Higuchi	Representative Director & President, Tohoku Electric Power Company
Director	Naohiro Masuda	Executive President and CEO, Japan Nuclear Fuel Limited
Director	Koji Matsuda	Representative Director & President, Hokuriku Electric Power Company
Director	Mamoru Muramatsu	President, The Japan Atomic Power Company
Director	Nozomu Mori	Director, Representative Executive Officer, President Kansai Electric Power Company
Auditor	Yasunori Inada	Vice President and Executive Officer, CEO of Nuclear Energy Business Unit, Hitachi, Ltd.
Auditor	Hajime Yamazaki	President & Representative Director, Global Nuclear Fuel-Japan

ATENA: Atomic Energy Association

Established in 2019 as a new organization that plans effective safety measures and promotes introduction to the sites of nuclear operators, while effectively utilizing the knowledge and resources of the entire nuclear industry and engaging in dialogues with the regulatory authority, etc., for the purpose of establishing autonomous and continuous efforts in the nuclear industry.

CNO: Chief Nuclear Officer**INPO: Institute of Nuclear Power Operations**

The operators' self-regulatory organization established in 1979 by the U.S. nuclear operators for the purpose of promoting a high level of safety and reliability in commercial nuclear power generation, as a lesson learned from the TMI (Three Mile Island) nuclear power plant accident that occurred in March 1979.

JANSI: Japan Nuclear Safety Institute

An organization established in FY2012 under the consensus of the Japanese nuclear industry as an organization that untiringly pursues the world's highest level of safety in order to prevent any events similar to the TEPCO Fukushima Daiichi Nuclear Power Station accident.

NRA: Nuclear Regulation Authority**NRRC: Nuclear Risk Research Center**

Established in 2014 as a research and development center for developing the technologies and expertise necessary for initiatives by nuclear operators to tirelessly improve the safety of the use of nuclear power generation.

SR: Senior Representative - A representative who will be JANSI's general contact point for stations

TCP: Technical Contact Point - JANSI's contact point for stations in 15 areas of expertise

WANO: World Association of Nuclear Operators

A global organization established in 1989 with the aim of improving the safety and reliability of nuclear power plant operations through friendly competition and exchanges among the nuclear operators worldwide in the wake of the Chernobyl nuclear power plant accident.

CAP: Corrective Action Program

Mechanism for picking up nonconformities in the organization and leading to recurrence prevention as well as prevention.

CM: Configuration Management

The system engineering task or process for establishing and maintaining the scope, performance, functional and physical requirements, design, and operational information throughout its life.

OE: Operating Experiences - Information on operating experience including troubles

Peer Pressure

A mechanism for improving safety through mutual check and balance by holding discussions on safety improvement of the entire operators based on further identification of/response to improvement items and its results through peer reviews, based on the notion that "We are in the same boat" and that the whole nuclear industry is influenced by the performance of each other.

Peer Review

Intended to improve the safety and reliability of station office through experts' visit to power plants and review (evaluation) of activities pertaining to ensuring the safety (nuclear safety, radiation safety, occupational safety, etc.) and reliability of the station office from their professional standpoint. In the nuclear industry, WANO and JANSI conduct peer review of power plants at a fixed frequency.

PI: Performance Indicator - Power plant performance indicator

PMCM: Performance Monitoring & Continuous Monitoring

Constantly grasps the status of power plant performance from performance monitoring system data and various information.

RIDM: Risk-Informed Decision-Making – Decision making utilizing risk information

A decision-making process currently being undertaken by the operators towards implementation, which aims at a more rational decision-making by integrating findings from Probabilistic Risk Assessment (PRA) in addition to the conventional deterministic assessment.

SAT: Systematic Approach to Training

Systematically performs training program design and effectiveness evaluation by starting with business analysis and listing necessary knowledge and skills.

TPT: Team Performance Improvement Training - Team performance improvement training for operators

