

The Russian Federation Atomic Energy Ministry
"ROSENERGOATOM" GENERATION COMPANY



Assessment of Operation Safety at
« ROSENERGOATOM» NPP's

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1. Self-Assessment of operating experience as a method for improvement of NPP safety

The general safety goals, objectives and functions of operating organization in the field of safety of the nuclear installations, radiating sources and storages for the nuclear materials and radioactive substances are determined in the normative documents currently in force in nuclear power of Russian Federation (RF) on the base of the federal laws and other normative legal acts regulating relations at using atomic energy.

The 35 article of RF Law № 170-FZ of November 21,1995 *"About nuclear energy usage"*, in particular, says: *"The operating organization develops and carries out measures for the safety ensuring of the nuclear installation, radiating source or storage, establishes special services if it is necessary for safety monitoring, presents information on safety conditions of the nuclear installation, radiating source or storage to the state safety regulatory bodies"*.

The basic national documents on safety (OPB-88/97 "General rules for NPPs safety assurance", OPE NPP, RD 04-03-99 "Requirements to NPPs operating utility"), the recommendations of the IAEA Code of NPP safety regulations – all this fix a necessity of the permanent analysis and safety evaluation at NPPs, monitoring (realized by operating organization) all the activity, important for safety, at all stages of NPP life cycle.

The operating safety self-assessment is the process of safe operation efficiency assessment, which is realized by operating organization with the separate persons, groups of the persons and management.

An aim of the self-assessment is to enhance the safe NPP operation level due to direct involving of the personnel in process of the critical analysis and due to quality improvement both its own activity and results of work. The self-accesment is requested to ensure the effective activity of management, safe operation control and timely development of corrective measures for NPP safety improvement.

The self-assessment is intended also for the revealing and elimination of shortcomings hampering the progress of safe operation.

In nuclear power of Russia the application of self-assessment for the safe NPPs operation was began with the branch development. As well as in world practice, the assessment of safe operation in the branch is being carried out at the following four levels:

- **Independent external assessment (national level)**
- **Independent internal assessment (level of operating organization)**
- **Self-accesment realized by the management and departmental supervision (NPP level)**
- **Self-accesment realized by the separate persons and groups of the persons (level of NPP).**

It is obvious, that last three types of assessment concern directly to responsibility of operating organization. Further a worker practice of using self-assessment for safe NPP operation is considered for each of last three levels separately. It is necessary to take into account, that the list of works on self-assessment, performed in the branch and presented in this report, is not exhaustive.

The assessment and self-assessment in nuclear power of Russia is a process continuous and regulable both by a complex of the documents of the different level and assignment (Laws of Russian Federation, normative legal acts, normative documents which include the rules, norms,

national standards, instruction, technique etc.), and the operating organization and NPP management activities.

List of normative documents currently in force and regulating the safe NPP units operation, came into force by Order of "ROSENERGOATOM" № 117 from 09.03.00.

2. Independent internal assessment (Level of operating organization)

The independent internal assessment is carried out within the framework of operating organization, but so that the persons or body which are carrying out the assessment are independent from a kind of estimated /examined activity.

Analysis of NPP units critical operating parameters is carried out constantly

The appropriate divisions of "ROSENERGOATOM" at technical support of the ensuring enterprises steadily estimate the NPP units critical operating parameters and characteristics.

Solution of this problem is provided with realization of opportunities of the "ROSENERGOATOM" Crisis Centre (CC). One of the main CC tasks is the monitoring critical technological and radiation parameters at NPP both under normal operating conditions and under safe operating violation conditions. The Crisis Centre has available the operative information of:

- Modes of main equipment operation of the reactor, turbine installation and unit as a whole;
- Integrity of claddings, circulation circuit, containment (of fast - tight boxes);
- Serviceability of systems important for safety;
- Serviceability of safety systems;
- Radioactive release availability into an environment (through ventiduct, turbine ejectors, safety valves etc.).

The round-the-clock watch of the dispatchers and engineers of on duty shift provides the operative deploying of all information means for engineering support and a due notice of experts of the OPAS group and support group. Shift engineer working station allows him to obtain data on critical parameters at NPP operating, actual and prognostic weather data as well as to make an information exchange with CTP.

As the Concern " ROSENERGOATOM " deals with NPPs of various designs and with reactors of various types, a condition for CC successful work is its cooperation with CTP of the enterprises of General Designers, Research Project Managers and other base enterprises of branch.

The following works are carried out periodically:

- Assessment of NPP unit and design adequacy as well as of safety regulation documents;
- Assessment of safety improving programs for NPP units;
- Analysis of changes made in design approaches;
- Analysis of NPP units operation experience;
- Checks of safe NPP operation condition.

For illustration of the above mentioned:

Assessment of safety improving programs for NPP units

Programs for improving NPP units safety including measures for solution of the safety problems and shortcomings revealed by the NPPs, Concern " ROSENERGOATOM " and also by state safety regulation bodies in course of NPP operation are annually drawn up and supervised (in performance).

Analysis of operating experience

The acquisition, processing and generalization of data, their analysis and distribution in branch are carried out in accordance with the management directive of operating organization " The principle points for organization of branch information system of Concern " ROSENERGOATOM " on NPPs operating experience " (RD EO 0152-99) at technical support of VNIIAES.

This information includes also:

- Engineering and economic factors for NPP units operation;
- Safe operating parameters for NPP units;
- Violations in NPP operating both of shop level and NPP level;
- Failures, defects and damages of the NPP equipment and systems;
- NPP nuclear safety condition;
- NPP radioactive waste circulation condition;
- Radiation safety condition in NPP.

The branch databases, which now are improved on the basis of modern computer technologies, are applied to these purposes.

When analyzing the operating experience various kinds of information materials are issued and directed to NPPs of " ROSENERGOATOM. For example, the nuclear power plants receive annually fair quantity of information about violations taken place at operating both the branch NPPs and foreign NPPs (from 100 up to 250 information materials) from the following sources:

- "ROSENERGOATOM" (information letters about events at NPPs of "ROSENERGOATOM", express - information collections about NPPs operation - monthly);
- WANO -MC (information messages about foreign NPP events);
- VNI I AES (information messages about violations at Russian NPP operating; information messages about events at foreign NPPs, received from IAEA; quarterly reviews of the information about violations at the NPPs operating, failures and defects of equipment; collections of engineering solutions introduced at NPPs; thematic reports, data cards of assessment of INES events at the Russia, Ukraine, foreign NPPs; quarterly reviews on technical and economic parameters for the branch NPPs operation etc.);
- NPPs with reactors of the same type under the mutual agreement between NPPs.

The analysis of the reasons and corrective measures taken on the revealed problems and shortcomings in operating NPPs, is performed by ensuring enterprises of "ROSENERGOATOM" and the obtained results are taken into account by the Concern in its daily activity on safe NPP operation ensuring and in preparing the long-term plans on NPP units safety improving.

The analysis of the current safety condition in NPP units operating

Since 1991 the operating organization ("ROSENERGOATOM"), as agreed with RF GOSATOMNADZOR, had put into practice the performance (by the acting NPPs) of annual assessments of the current safety condition in operating of each unit separately. These assessments are performed under control of operating organization and made official as special reports in accordance with "The regulation of annual reports on assessment of safety condition at NPP units operating" (RD EO 0143-99). In the given management directive the volume of assessments to be performed and requirements to the report on assessment of current safety condition NPP units are established. The purpose of this assessment is:

- Inspection of an actual condition of the safety systems as well as other systems and equipment, important for NPP safety;
- Analysis of a condition of physical safety barriers and accident localization systems;
- Assessment of radiation situation in the NPP and natural environment;
- Check of performance of works on the modernization and reconstruction of the systems and equipment; assessment of effect of performed works on unit safety;
- Check of the nuclear, radiation, technical and fire safety conditions at NPP;
- Consideration and assessment of the violations at operating NPPs and mistakes of the personnel;
- Definition of measures directed to reliability and safety improving in the course of further operation of the NPP unit.

"Annual reports" presented by NPPs pass the VNII AES examination and then are directed in RF GOSATOMNADZOR for consideration and account. All this is performed within the framework of NPP unit operating licence. A resolution on acceptable safety level is made on the base of results of assessment of current safety conditions at NPP units; measures directed on the further improving of reliability and safety are developed and carried out.

To make sure at branch level the assessment of general phenomena typical for unit groups and to generalize the operating experience VNII AES annually issues and distributes in branch "The summary annual report on assessment of safety condition in operating NPP units in Russia".

Assessment of safety culture at operating NPPs

The basic document of Russia on safety in nuclear power "The General Rules for assurance of NPPs safety" refers the building of safety culture to organizational measures ensuring the first level of protection disposed in depth.

When analyzing the safety culture condition in acting NPP units three basic aspects are marked out which can be considered as administrative - organizational protection barriers for safe operating:

- Ability to reveal the latent shortcomings and unsolved safety problems;
- Ability to identify the importance of events, safety problems and adequately react to them;
- Ability to take lessons and solve safety problems.

The practice of the assessment and self-assessment of safety culture applied at Russian NPPs is mainly based on the ASSET IAEA methodology.

Both methods for safety culture assessment are approbation in the branch NPPs: a VNIIAES method for quantitative assessment and ASSET IAEA method.

VNIIAES method requires additional discussion and completion. The ASSET IAEA method is acceptable and is realized at a number of NPPs of "ROSENERGOATOM".

A. Kolotov, «Assesment of Operation Safety at Porenergoatom NPP's», Sixth Internation Information Exchange Forum, Ukraine, Kiev, April 08-12 2002.

Now attempts are made at the " ROSENERGOATOM " NPPs to use methods of psychology (realization of the formalized interview, questioning, testing, psychological and ergonomic analysis at revealing the radical reasons of mistakes of the personnel) for an assessment of safety culture.

In branch the methodical materials are entered into action, which enable to estimate a safety culture condition with the help of the factors and indicators. Annual reports on safety culture are issued by operating NPPs since 1997.

Thus, the favorable conditions for performance of one of the IAEA recommendations as for an annual thematic assessment of NPP safety are created on the basis of the analysis of the event reasons and safety culture aspects.

Checks of safe NPP operation condition

The self-assessments of NPPs activities are carried out both at a corporate level, and at NPP level according to the management directive of operating organization " The principal points for the organization of NPP safety control at the " ROSENERGOATOM" NPPs (RD EO 0173-99).

Three kinds of NPP safety self-assessment are provided:

- Complex;
- Targic;
- Operative.

The complex self-assessment provides check of a condition of all the safety areas. Such check is carried out, as a rule, by group of the inspectors having various specializations, under the direction of the representative of operating organization. Necessary representatives from the other NPPs are included in the inspection group.

The targic check provides check of condition of separate safety areas (of the nuclear, radiation, fire, technical, labor protection).

The operative checks provide an assessment of separate questions solution for ensuring of NPP safety kind.

The check carrying out programs include, as a rule, check of performance results of:

- measures planned by the previous checks;
- instructions of bodies of state safety supervision and of operating organization;
- requirements of standard technical documentation as for nuclear, radiation safety, on work with the personnel.

The obligatory preventive procedures (technical inspection of the equipment and pipelines, detailed checks of a condition of various spheres of NPP activity), revealing of systems (elements) requiring the special attention for safety ensuring at NPPs operating, comparison of safety parameters for units of the same type are laid into basis of the program.

As a result of checks the followings are defined:

- Tendencies in unit condition change at its operating;
- Efficiency of measures taken for safety improving at operation;
- Measures for safety improving.

As a result of the checks the order documents are worked out, the performance of which is supervised by NPP appropriate services.

The control over the development and realization of measures on maintenance and safety NPP improvement is carried out in accordance with the established procedure.

3. Self-assessment realized by the management and departmental supervision (NPP level)

The self-assessment realized by a management and departmental supervision at NPPs is carried out within the framework of day-to-day activity on assessment of work efficiency in the appropriate areas of their responsibility.

The following works are carried out constantly:

- The control of a technical condition of the systems and equipment;
- Inspections of workplaces and walks, i.e. supervision over work with a view of check of conformity of procedures and their application;
- Supervision over personnel training.

The following works are carried out periodically:

- Commission checks of divisions, procedures and technological processes under the programs of operating organization, NPP;
- The analysis of the tendencies for safe NPP unit operation parameters;
- The acquisition, analysis and realization of NPP personnel's offers;
- The analysis of the direct and radical reasons with the purpose of definition of sufficiency of corrective measures for prevention of events important for safety;
- Generalization and analysis of events important for safety with the purpose of revealing the repeating events and shortcomings as well as of check of efficiency of corrective measures taken before;
- Commission checks of NPP divisions cooperation;
- The instructing of personnel performing the works;
- Separate thematic days (realization of collective measures on perfection of certain methods, for example, " Day Safety Engineering ").

For an illustration of the above mentioned:

The control of technical condition of the systems and equipment

The maintenance of the equipment and systems in the serviceable and efficient condition is provided at the expense of the constant control over the systems and equipment condition, and also at the expense of periodic checks and tests of the equipment serviceability carried out in the course of the operation and maintenance in accordance with "The rules of organization of maintenance and repair of the NPP systems and equipment " (PNAE G-0069-97), managing document " Maintenance and repair of the systems and equipment of NPPs. Quality assurance. The principle points " (RD EO 0086-97).

Maintenance and repair are carried out compliance with schedules approved by NPP management according to the requirements of the operating instructions regulating the volume and procedures for performance of such the works.

The tests at NPP, not stipulated by the technological regulations and operating instructions, are carried out under the programs and techniques involving the measures on safety ensuring of these tests. The programs and techniques for such the tests are to be coordinated with the developers of the NPP design and are to be approved by operating organization. RF

GOSATOMNADZOR permits the tests according to conditions of transition from one stage of work to another, established in the license.

After maintenance and repair the safety systems elements and themselves these systems are checked on the serviceability and conformity to the design characteristics with check results documenting.

The analysis of the current safety condition at NPP unit operating

In accordance with “Regulations for Annual Reports on Safety Assessment of NPP Operation” (RD EO 0143-99), nuclear power plants calculate and analyze safety current status during operation of every NPP unit. As stated above, these assessments are submitted to operating organization and Gosatomnadzor of Russian Federation.

The management of NPP uses the assessment results of of NPP units’ safety current status in their activities to maintain the acceptable safety level.

Analysis of operating experience

The use of operating experience by NPPs is regulated by utility instructions and regulations developed by the NPP.

Internal and external information on the operating experience is used by NPP in the ways as follows:

- getting familiar with materials of NPP units personnel;
- using this material to develop activities for prevention of similar failures;
- using information and training aids in the course of training and maintenance of qualification of operating and maintenance personnel.

These activities are constantly being developed at NPPs as far as the information enters. The relevant department of NPP issue periodical reviews and reports on NPP operational breakdowns, equipment damage and failures, which are to be distributed among NPP personnel.

Analysis of causes of safety related events

Breakdowns in NPP operation level are registered and investigated as required by regulatory document “Regulations for Investigation and Registration of NPP Operation Breakdowns” PNAEG-12-005-97.

Instructions establishing the procedure of registration and investigation of workshop breakdowns are available at all NPPs.

Teams for analyzing the causes NPP operational breakdowns are organized and working at a number of NPPs (Balakovo NPP, Smolensk NPP, Kursk NPP, Kolskaya NPP). These teams apply ASSET methods in their work to analyze the immediate and root causes. At other NPPs with no such teams available, these functions are assigned to different NPP departments (the functions of breakdown analysis team are partially assigned to the service for personnel training and to departments of in-plant inspections).

Assessments by commission

Assessment of NPP activities at the plant level are carried out in accordance with plans approved by the plant management. Self-assessments include monitoring of safety status in the following areas:

- nuclear safety status;
- safety engineering status;
- radiation safety status;

- organization of technical supervision;
- probabilistic safety analysis activities.

To organize the assessments, a relevant organizational & administrative document is prepared which specifies the departments to be inspected, the inspection programme, NPP managers assigned to the departments, dates of inspection and issuance of a decree according to the inspection results.

Subject Days

As a rule, once in three months, some days at all NPPs are devoted to a specific subject, e.g. Nuclear Safety Day, Labour Protection Day, Radiation Safety and Environment Protection Days, with the purpose to assess activities in the relevant field.

4. Self-assessment of individuals and groups (nuclear power plant level)

Self-assessment of individuals and groups at NPP is carried out in the course of routine work as compared to a number of reciprocally coordinated procedures.

Those to be constantly implemented are:

- Individual self-control, i.e. observation of STAR principle;
- Personnel training during work performance;
- Permanent analysis of equipment operation, i.e. filling in the logbooks and analysis of procedures for compliance during their fulfilment.

The following is carried out systematically:

- Try-out, testing, adjustment, etc of the equipment used for testing readiness and serviceability of the equipment;
- Monitoring in the course of the personnel training;
- Emergency training;
- Analysis of interrelated problems;
- Postrepair testing in order to check the efficiency of the repair work.

5. Some Bottom Lines from Introducing the Self-Assessment in NPP Activity

Enhancing safety of NPP operating units is the subject of great importance and systematic work of “Rosenergoatom”. The developed and approved concepts on enhancing NPP safety, that represent basic approaches, principles and criterion of safety for power units of different types, specified on the basis of the experience self-assessment analysis, are this activity base.

Upon the above concepts the nuclear stations have developed the schedules for engineering rearmament and modernization of particular power units. Implementation of actions specified in the schedules resulted in stabilization of the power unit safety operation indices and raise their feasibility indices.

Slides 15 – 21

6. Conclusion

Nuclear engineering self-assessment programs were elaborated based upon the NPP operating experience available in Russia. An operating enterprise supports constantly the assessment and self-assessment that should cover all NPP safety-important activities and all required managerial levels of the operating organization.

Perfecting of regulating-administrative and other documents of the operating organization taking into consideration the assessment and self-assessment process development is of special emphasis.

In addition, international experience, recommendations and guidelines of the IAEA, WANO-MC and major utilities of the world are under consideration.

In particular, in this September the workshop on NPP safety self-assessment experience is scheduled in Russia within the framework of the National Project IAEA RUS/9/002 "NPP Safety Analysis".

Another mission is also scheduled to Bilibinsk NPP for this year with the purpose to improve IAEA Program "PROSPER" – "Assessment and Checking of the Efficiency of the NPP Safety Experience Analysis".

In further reviewing of Branch Programs on the perfection of NPP operation and modernization "Rosenergoatom" will take into consideration **all** fundamentally new and acceptable elements of new IAEA and WANO-MC programs.

The lack of legibly formulated assessment efficiency criterion of the programs under consideration, covering **all basic nuclear station activities**, are drawbacks in application to NPP safety self-assessment branch programs.

Improvement of Operational Safety the Self Assessment at the Russian NPPs

1. The Need to Improve

The self-assessment is an integral part of person's vital activity. All people make self-assessment from a certain criterion standpoint: appearance, state of health, feasibility to conduct particular work, etc. As far as managing procedure, the activity self-assessment is a relevant factor to enhance efficiency of the work performance. The assessment of the administration activity and the activity performed by the enterprise under his managing is a part of the managing procedure the realization of which needs to have definite idea of the sequence, methodology and implementation criterion. The self-assessment provides for detecting and solving NPP problems and creates the necessary prerequisites for finding, analyzing and following problems and defining trends. However, detection of problems contributing to decreasing of operating safety and reliability is of first priority. That is why safety/reliability-related activity is the first priority in the self-assessment.

The administration self-assessment in Russian NPPs is performed as routine daily meetings, detours, control of partial progress and personnel training. Moreover, Annual Safety Reports are issued; current safety level, experience, safety culture are analyzed, and internal quality audits are performed. However, recently the worldwide self-assessment experience providing for more effective process from safety enhancing has been pooled. To make self-assessment at all managing levels: from the top structural unit to the executives, is of great importance. A wide-implemented "safety culture", the assessment of which is of great importance now as well, is one of vital aspects in enhancing the self-assessment efficiency. Thereby, there is the possibility to improve the self-assessment at the Russian NPPs.

Considerable personnel are involved in the self-assessment and therefore the development of the self-assessment program (guidelines) describing "who" makes "what" and in which sequence as well as which indices are used in the course of the procedure, is especially important. This has the effect of detecting the available safety shortage and elaborating the corrective actions. The self-assessment and corrective actions programs are the tools for detecting and further realizing of required modifications to enhance NPP managing efficiency and to decrease the probability of likely events.

For an early detection of problems the self-assessment of both the administration and executives is of particular importance. Thereupon the self-assessment culture takes on great significance, when the personnel are motivated for the independent and permanent self-assessment of their activity. Thereby, the self-assessment in the Russian NPPs should be improved by the following two ways: development of detailed instructions to conduct the self-assessment and arrangement of conditions to develop the self-assessment culture.

2. Activity in Support of Self-Assessment in NPPs

Different International Self-Assessment Programs (e.g. IAEA OSART, ASSET and ASCOT Programs) have been developed to support the self-assessment in NPPs. The experience gained in realizing of the programs together with the experience in conducting quality audits (together with VNIIAES experts) available in "Rosenergoatom" provides for the development of an individual efficient self-assessment methodology for all activities performed in NPPs. At that it should be taken into consideration that the self-assessment methodology depends, first of all, on the qualification of the personnel using the methodology. So the top administration self-

assessment may be expressed in auditing both internal and external (between partners). Managers of operating level (heads of divisions and their deputies) may make self-assessment by means of internal audits and analyze personnel's proposals. The operating level (operators, engineers, workers) should have the tool, first of all, for the direct self-assessment like STAR (Stop, Think, Act and Review).

Thus, the top administration self-assessment takes a kind of "strategy". The "strategy" should result in improving the design characteristics and decreasing NPP event recurrence. During the self-assessment of managers of the operating level they realize tactical schemes, namely: decreasing a number of non-conformances detected during the external audits, work off maintenance backlog, etc. As a result of the self-assessment the personnel directly involved in the implementation of the work should develop proposals on improving the organization and implementation of work. In this case a share of personnel participated in the self-assessment, a quantity of proposals on the improvement and, that is not less important, the results of the response to the personnel's proposals may be the indices for the self-assessment efficiency.

The self-assessment, being the tool for the effective administration provides for the NPP administration confidence in supporting safety operation of the plant. The methodology and controlled parameters should be developed to have more effective tool for understanding current safety operation conditions and for detecting the ways of its improvement.

3. Perfection of the Self-Assessment

Since 2000 the self-assessment improvement of the NPP operation safety has become the first priority activity in "Rosenergoatom". On February 2001 "Actions for Perfection of the Self-Assessment System for "Rosenergoatom's" NPP Safety Operation" were developed and signed by the President of "Rosenergoatom". The Actions were targeted at the analysis of documentation and experience gained from the application of the self-assessment in Russian and Western NPPs in order to obtain the best experience and to develop the effective-operating self-assessment system for NPPs in Russia. In the result "Rosenergoatom"'s Self-Assessment Standards should be developed and NPP personnel should be trained.

At the initial stage of the Actions realization in March 2001 "Rosenergoatom" organized and held, jointly with WANO-MC and VNIIAES, a coordination meeting on NPP safety self-assessment. 26 experts from different organizations involved in the operation and supporting of Russian NPPs, took part in the above meeting. Representatives of the seven nuclear stations, RC GAN RF, ORC "Prognoz", RRC KI and even MEI have participated in the meeting. Papers describing various self-assessment approaches were represented by the participants from "Rosenergoatom", VNIIAES, WANO-MC, RRC KI and ORC "Prognoz". In the course of discussions there was made a decision to form a Working Team that includes the representatives from NPPs, VNIIAES and some supporting organizations. The Working Team's mission is to acquire and process information of best self-assessment experience, activity optimization and also to develop the self-assessment methodology and indices for each activity.

In compliance with the Actions the two integrated quality system documents in the form of NPP safety self-assessment standards, with titles "NPP Self-Assessment Methodology in Respect of NPP Operating Safety" and "NPP Self-Assessment Criterion in Respect of NPP Safety", should be elaborated for a year. The IAEA documents (IAEA-TECDOC 1125 "NPP Operating Safety Self-Assessment", IAEA-TECDOC 1141 "Safety Indicators in Nuclear Stations Operation" and IAEA-TECDOC 632 "ASSET Guidelines"), INPO ("The Way for

Assessing Experience Use” and “Principles of the Effective Self-Assessment Programs and Corrective Actions”), and risk assessment by the probabilistic safety analysis Technique. But it should be noted that the self-assessment differs from the independent assessment performed by a third-party organization, and has much in common with the internal audits conducted in NPPs. Consequently, the internal audit methodology may be a basis for the development of the self-assessment methodology.

In addition, the lines of NPP activity should be chosen that are related to the utmost to the operating safety, and the self-assessment of which is the task of the first priority. Own self-assessment matrix and criterion for its realization (self-assessment indices) should be developed for the activity specified. Having regard to the fact that the self-assessment methodology is a document of a common nature and is used to assess different NPP activities, the Annex describing examples of the assessment of some activity is required. In the final analysis, all NPP activities should be provided by their own self-assessment directions representing the sequence of the self-assessment procedure and persons responsible for this stage.

Personnel’s training is a subject of importance as well as the development of the documents. The personnel involved in the self-assessment should know well enough the self-assessment methodology and indices in proper lines of activity. To this end the NPP personnel training within the “Rosenergoatom’s” activity of “The Quality Training Center” is envisaged by the Actions. The Quality Training Center is a relatively recently established division in VNIIAES, equipped with the required computers and office equipment. Nuclear experts with the experience of NPP operation and elaboration of quality assurance documentation are involved in the Center’s activity. All experts have taken a course of quality audits training and implementation that was organized by the English Party.

4. Conclusion

The operating organization has scheduled for the forthcoming year to elaborate the NPP safety self-assessment standards and to settle precise criterion for its performance. Toward this end it was decided to form a Working Team including of NPP and VNIIAES representatives to elaborate major tasks on the self-assessment improvement, development and implementation of new documentation and training the personnel in new methodology. Actions developed by “Rosenergoatom”, one of its items is the participation of “Rosenergoatom” and VNIIAES representatives in the workshop, contains the sequence of Russian NPP safety self-assessment improvement at the first stage.