

Federal Authority of Russian for Nuclear and Radiation Safety

Resolution No.1

of January 5, 1998

**On Approval of and Enactment of Provision for Procedure of Announcement of
Emergency, Prompt Information Communication and Arrangement for Emergency
Assistance to Nuclear Power Plants in Case of Radiation-Hazardous Situations**

(revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF
No.1 of 8/30/2002)

The Federal Authority of Russia for Nuclear and Radiation Safety resolves:

1. The Provision on procedure of announcement of emergency, prompt information communication and arrangement for emergency assistance to NPPs in case of radiation-hazardous situations" (NP-005-98) shall be approved and put into effect starting from July 1, 1998.
2. "The Provision on procedure of announcement of emergency, prompt information communication and arrangement for emergency assistance to NPPs in case of radiation-hazardous situations" 1992 shall be considered to have lost force starting from July 1, 1998.

Head of
Gosatomnadzor of Russia,
Yu.G.Vishnevsky

Approved by:
Resolution of
Gosatomnadzor of Russia,
No.1 of January 5, 1998

Approved by:
Secretary of state
First Deputy Head of
Gosatomnadzor of Russia,
A.T.Gutsalov
December 30, 1997

Head of
Main office of MVD of Russia
First Deputy Minister
Internal Affairs of Russia
Colonel General
Domestic services
P.T.Maslov
July 30, 1997

First Deputy
Minister of Health
of the Russian Federation
A.M.Moskvichev
July 30, 1997

AGREED UPON WITH:
Ministry
of the Russian Federation

for Atomic Energy

July 4, 1997

Ministry
of the Russian Federation
for Civil Defense
Emergency and Relief
of Natural Disasters

July 29, 1997

Ministry for Defense
of the Russian Federation

August 19, 1997

Ministry of Communications
of the Russian Federation

July 9, 1997

Concern Rosenergoatom

March 21, 1997

Rosgidromet of Russia

March 25, 1997

Enacted

from July 1, 1998

**Federal Codes and Regulations
In the Field of Atomic Energy Use**

Provision

**For the Procedure of Announcement of Emergency,
Prompt Information Communication and Arrangement for Emergency
Assistance to Nuclear Power Plants in Case of Radiation-Hazardous
Situations**

NP-005-98

(revised by Amendment No. 1 approved by Resolution No.1 of Gosatomnadzor of RF
dated 8.30.2002)

1. Approved abbreviations

NPP - nuclear power plant

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF
dated 30.08.2002)

ETC - Emergency technical center

VV MVD - Russian abbreviation for Interior Forces of the Ministry of Internal
Affairs of the Russian Federation

WWER - water-moderated water-cooled power reactor

Gosatomnadzor of Russia - Federal Authority of Russia for Nuclear and Radiation
Safety Supervision

Gosgortekhnadzor of Russia - Federal Mining and Industrial Supervision Service of
Russia

SFPS - State Fire Prevention Service

SUAE - State Unitary Aviation Enterprise

MCCICCT - Main control center for intercity communication and television

CAA - controlled access area

PECC - protected emergency control center

PECC/S - protected on-site emergency control center

PECC/T - protected emergency control center for the NPP satellite town.

PECC/EA - protected emergency control center for the NPP evacuation area

Concern Rosenergoatom - The Federal State Unitary Enterprise "The Russian State-Owned Concern for nuclear electric power and heat generation".

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

ERC - Emergency Response Center of Rosenergoatom

KChS - Russian abbreviation for Commission for Emergency (territorial)

KChSK - Russian abbreviation for Commission for Emergency of Concern Rosenergoatom

KChSO - Russian abbreviation for Commission for Emergency of NPP

Minatom of Russia - Russian abbreviation for Ministry for Atomic Energy of Russia

IDB - EMERCOM Interdepartmental Board for emergency prevention and elimination

MVD - Russian abbreviation for Ministry of Internal Affairs of the Russian Federation

Minoborony of Russia - Russian abbreviation for Ministry of Defense of the Russian Federation

Minsvyaz of Russia - Russian abbreviation for Ministry of Communications of the Russian Federation

Mintopenergo of Russia - Russian abbreviation for Ministry of Fuel and Energy of the Russian Federation

CMU (MU), TsGSEN FA "Medbioextrem" - Central Medical Units (Medical Units), Sanitary and Epidemiological Supervision Centers of FA "Medbioextrem"

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

EMERCOM –Ministry of the Russian Federation for Civil Defense, Emergency and the Relief of Natural Disasters

RD - regulatory documentation

SSP - Shift Supervisor of the plant

SEC NRS of Gosatomnadzor of Russia - Scientific and Engineering Centre for Nuclear and Radiation Safety of Gosatomnadzor of Russia

NTC "Atomtekhnenergo" - research, development, and engineering center for improving NPP operation and human engineering.

OKBM - Russian abbreviation for State Unitary Enterprise "Experimental Mechanical Engineering Design Bureau named after I.I. Africantov", Nizhny Novgorod (as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

OKChS of Minatom of Russia - Russian abbreviation for Industry-specific Emergency commission of Minatom of Russia

OPAS - Russian abbreviation for the group of emergency assistance to nuclear power plants

OSChS – Russian abbreviation for the industry-specific system for emergency prevention and response of Minatom of Russia facilities

OO/AO - operational occurrence, NPP abnormal operation

MCC - mobile communication center

ERS - emergency response supervisor at NPP

LWGR - uranium-graphite channel-type reactor

Rosgidromet - Russian abbreviation for Federal Service of Russia for Hydrometeorology and Environmental Monitoring

RSChS – Russian abbreviation for the Russian Unified Emergency Rescue Service

RI - reactor installation

IPM - individual protection means

SChSK – Russian abbreviation for the emergency prevention and response system of Concern Rosenergoatom

SChSO - Russian abbreviation for the emergency prevention and response system of a facility (including NPP)

FSB of Russia - Russian abbreviation for Federal Security Service of the Russian Federation

FA "Medbioextrem" of Minzdrav of Russia - Federal Department for Bio-Medical and Extreme Problems of the Ministry of Health of the Russian Federation

ESC - Engineering support center for NPPs

CMC of EMERCOM of Russia - Crisis Management Center of EMERCOM of Russia

SCMC of Minatom of Russia - Situation Crisis Management Center of Minatom of Russia

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

CD and emergency response Headquarters - headquarters for Civil defense and emergency response

EMHPC FA "Medbioextrem" - emergency medical health physics center of the Federal Agency "Medbioextrem" of Minzdrav of Russia.

(the paragraph is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

ERT - emergency rescue teams

(the paragraph is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

EC/NPP - NPP emergency center (internal) (placed in PECC/NPP)

(the paragraph is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

EC/T - NPP emergency center (external) in a NPP satellite town (placed in PECC/T)

(the paragraph is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

CD - civil defense

(the paragraph is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

ERC area - organized workstations supplied with necessary communication equipment and firmware

(the paragraph is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

NTC VNIIAES and IT - Information Technology Research and Development Center of the All-Russian Scientific Research Institute for Nuclear Power Plant Operation

(the paragraph is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

EG - expert group

2. INTRODUCTION

2.1. To ensure preparedness of the Russian operating utility Rosenergoatom for providing urgent support to the nuclear power plants in case of radiation accidents or radiological hazards, a document titled “Provision on Procedure of Announcement of Emergency, Prompt Information Communication and Arrangement for Emergency Assistance to Nuclear Power Plants in Case of Radiation-Hazardous Situations” (hereinafter referred to as Provision) was issued.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

2.2. The document calls for inter-departmental interaction in case of radiological hazards at a nuclear power plant, defines roles and responsibilities of the inter-departmental group for providing urgent support to nuclear power plants, as well as the roles and responsibilities of scientific and technical support organizations.

2.3. The Provision determines actions of high priority that the plant operating personnel and management should take in case of a threat of occurrence or an actual occurrence of emergency at the plant, the procedure and criteria for declaring the states of “Emergency preparedness” and “Emergence situation” at the plant, the process of prompt

information transfer to ministries, departments, organizations, federal and municipal authorities in case of accidents at nuclear power plants.

The Provision specifies the main tasks, duties, rights and responsibilities of the emergency response group (OPAS) in case of radiological hazards at the plants, including arrangements for staffing the group, instructing, assembling and transporting the group to nuclear power plants in the Russian Federation.

2.4 The Provision defines the actions of NPP personnel and the OPAS group in case of radiation hazards or accidents.

2.5 The Provision regulates conditions for providing prompt assistance to the NPP within the control area boundaries and in the NPP satellite town to protect personnel and their families and to ensure successful completion of the action plan for personnel protection in case of an accident at an NPP.

2.6 The Provision does not address organizational arrangements for providing assistance to the population during radioactive substances release outside the control area. Solution of these issues is in competence of the territorial agencies. Procedures for this activity are covered by other regulatory documents.

2.7. Requirements of the Provision cover all the NPPs of Minatom of Russia and are compulsory for all enterprises and organizations whose representatives are members of the OPAS group.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

2.8 Requirements of this Provision also cover non-radioactive emergencies caused by fires, high-toxic substances release, flooding, earthquakes, tornadoes, industrial incidents and other installation defects as well as attempts of criminal elements to take illegal actions, which may cause a radiation accident.

2.9. The Provision is developed taking into account the structural changes in the Minatom of Russia and the requirements of current laws and regulatory documents.

(item 2.9 as revised Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

3. General Organizational structure of the emergency prevention and response system

3.1 Organizational structure

Arrangements for prevention of and response to both radiological and non-radiological emergencies at the NPP are provided by the operating organization.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

The Director of a nuclear power plant (a Rosenergoatom affiliate) (hereinafter referred to as NPP Director) is responsible at the site level for the NPP safe operation and compliance with the nuclear safety codes and standards in the field of atomic energy use at the NPP. The NPP Director is responsible for arrangements for preventing and mitigating the emergencies on the site and in the controlled area, as well as for any other measures prescribed by the emergency response procedures and the action plan to protect personnel in case of an accident at the nuclear power plant.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

The head of the local administration is responsible for public protection in accordance with the action plan for population protection in case of an accident at the nuclear power plant.

The Management of EMERCOM of Russia monitors preparedness of the control bodies, forces and means of the territorial and functional subsystems for emergency prevention and response.

Emergency prevention and response task is to guarantee the preparedness to operate in an emergency (control, safety, emergency planning) and to respond to it. The emergency prevention and response system is presented in Fig. 1. Rosenergoatom emergency prevention and response activities are described in Fig. 2.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

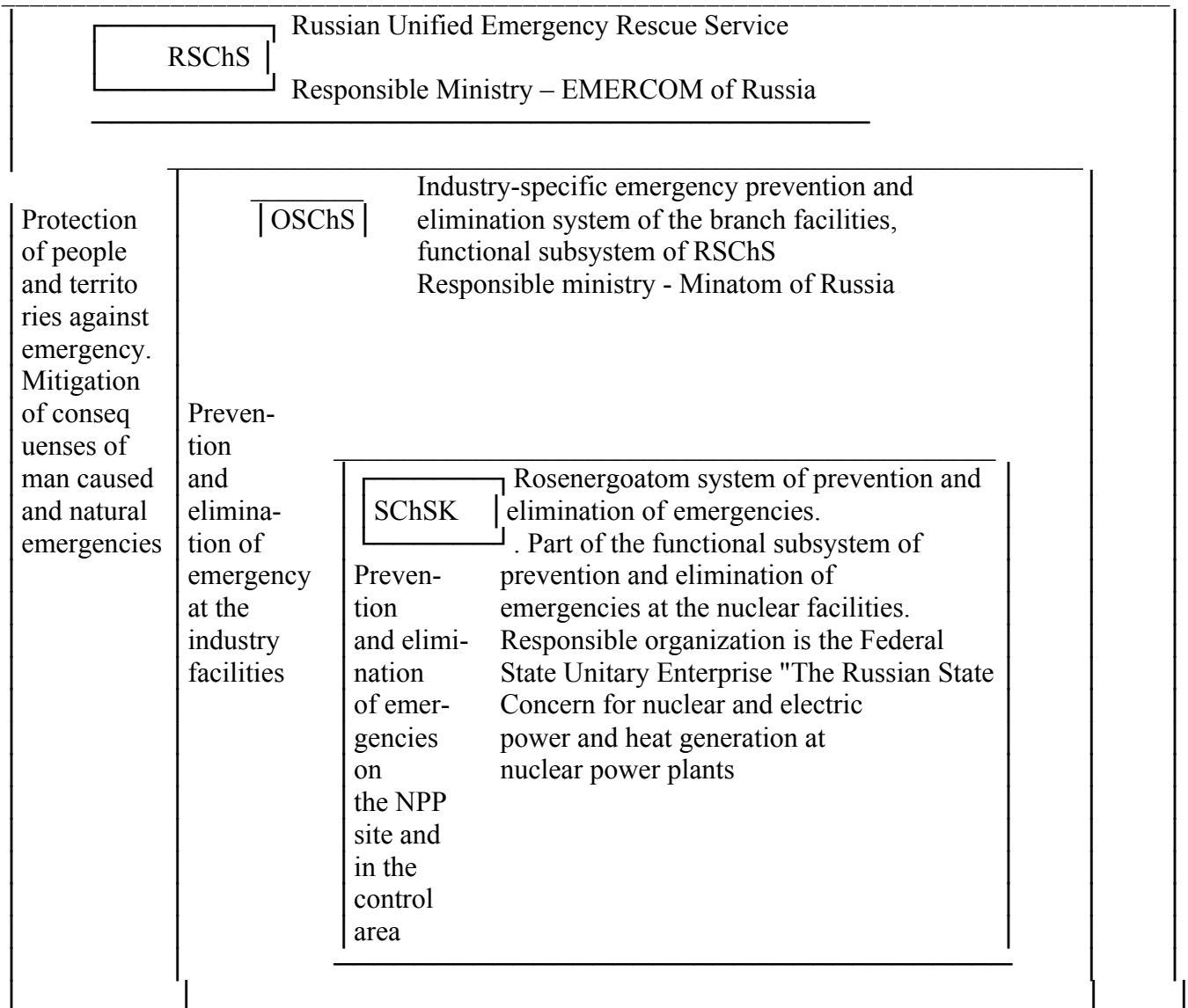


Fig. 1. Emergency prevention and response system

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

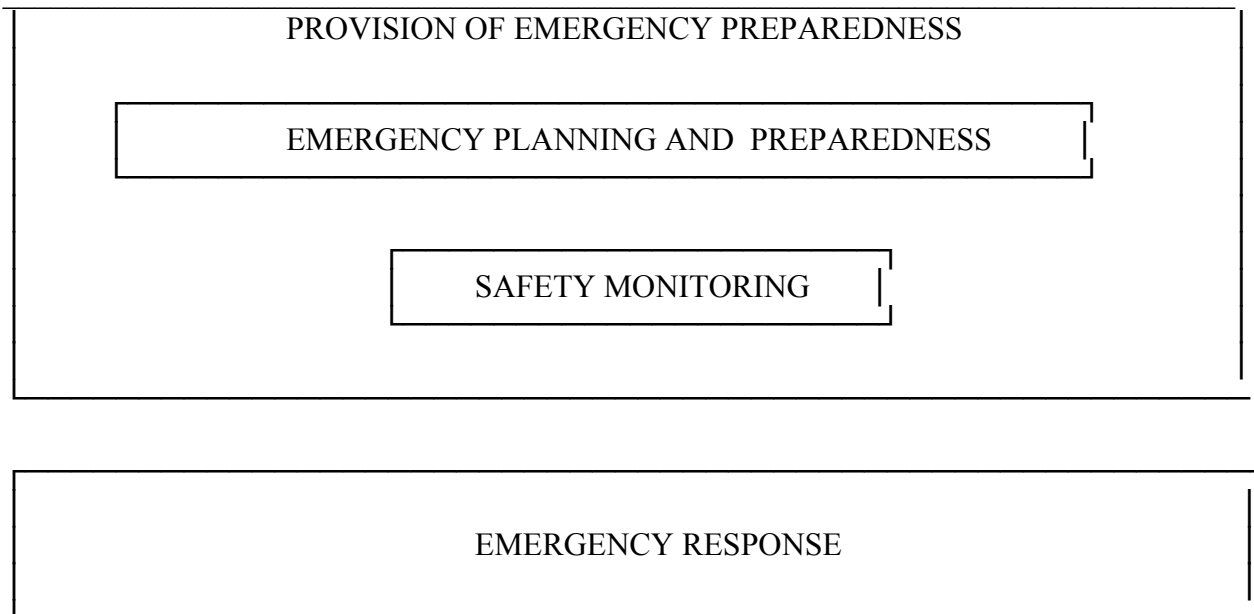


Fig. 2. Arrangements of Concern Rosenergoatom for emergency prevention and response

SChSK ensures Concern arrangements for preventing and eliminating emergency during NPP operation. SChSK incorporates emergency prevention and response systems of the facilities that are under Concern control - SChSO. SChSK is part of functional emergency prevention and response subsystem of Minatom of Russia - OSChS. In its turn, OSChS is the functional subsystem in RSChS (Fig. 1). Communications between OSChS and territorial functional subsystems is implemented within the RSChS framework. All systems operate in compliance with corresponding codes and regulations. Therefore, if an emergency occurs at an NPP, an emergency response action plan is introduced to ensure that all national emergency forces and facilities get involved if required.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

3.2 Emergency response management

The emergency response management consists in:

- assessing the situation
- making a decision

- providing technical and material support
- providing information
- organization of accident prevention and mitigation activities

Assessment of the situation is performed:

At the site level, by:

- ERS

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- KChSO

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002).

At the operating organization level, by:

(the paragraph is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- ERC of Rosenergoatom, ERC of ESC and OPAS group

(the paragraph is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

At the federal level, by:

Paragraph is removed. - Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- EMHPC FA "Medbioextrem"

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- management of OPAS group in case of radiation hazardous situations or accidents at the NPP.

Decisions are made:

At the site level, by:

- NPP emergency response supervisor (ERS), the NPP Director, or an acting Director responsible for implementation of an action plan for personnel protection in case of an accident at the NPP.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- KChSO together with ERS responsible for implementation of the personnel protection plan in case of an accident at the NPP.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- Headquarters of CD and emergency response responsible for routine management of emergency works for personnel protection and evacuation;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- KChS manage work of territorial bodies and subsystems of RSChS

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002).

At the operating organization level:

-KChSK manage emergency actions of organizations and services under Concern control.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- Emergency response center (ERC) provides prompt assistance to NPPs;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002).

At the federal level:

- OKChS of Minatom of Russia manages OSChS operation, participates in state programs, provides for emergency preparedness and prompt assistance to NPP from branch organizations.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- SCMC monitors radiation environment in NPP areas, arranges daily receipt of information on the current status, prompt notification of ERT and branch enterprises, international organizations and information communication with them.

(the paragraph is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- OPAS carries out interdepartmental coordination of emergency actions in case of radiation hazardous situations or accidents.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- IDB performs interdepartmental coordination of emergency arrangements of federal authorities.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- Gosatomnadzor of Russia supervises NPP safety

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- FA "Medbioextrem" performs federal supervision of radiation safety of personnel and participants in mitigation of accident consequences and elimination of environmental contamination.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

Technical and material support is performed:

At the site level, by:

PECC/NPP and PECC/T or an NPP expert group of specialists in co-ordination with Rosenergoatom ERC.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF of 30.08.2002)

At the operating organization level, by:

(the paragraph is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- ROSENERGOATOM emergency response centers;

(the paragraph is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF date 30.08.2002)

At the federal level, by:

SCMC of Minatom of Russia in cooperation with ROSENERGOATOM emergency response center, engineering support center (ESC) of the leading industry research institutes, design and development organizations (VNIIAES, OKB "Gidropress", NIKIET, etc.);

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- CMC of EMERCOM of Russia in cooperation with SCMC of Minatom of Russia, SEC NRS of Gosatomnadzor of Russia and Academy of Sciences research centers for protection of population and territories against emergency (IBRAE RAN, "Kurchatov Research Institute").

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

Public and population are informed about occurrence of radiation hazardous situations or accidents at NPP in accordance with Article 6 of the Federal law "On protection of territories against natural and man-caused emergencies."

Arrangements for accident prevention and mitigation are performed:

At the site level, by:

- ERS

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- KChSO;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- Headquarters of CD and emergency response at the NPP;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- KChS;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

At the operating organization level, by:

(the paragraph is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- KChSK of ROSENERGOATOM;

(the paragraph is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

At the federal level, by:

- OPAS;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

SCMC of Minatom of Russia in cooperation with ROSENERGOATOM emergency response center, ESC of the leading industry research institutes, design and development organizations (VNIIAES, EDO Hidropress, NIKIET, etc.);

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- CMC of EMERCOM of Russia in cooperation with SCMC of Minatom of Russia, SEC NRS of Gosatomnadzor of Russia and Academy of Sciences research centers for protection of population and territories against emergency (IBRAE RAN, "Kurchatov Research Institute") and Rosgidromet Federal Information-Analytical Center.

4. GROUP OF EMERGENCY ASSISTANCE TO NUCLEAR POWER PLANTS IN CASE OF RADIATION HAZARDS OR ACCIDENTS AT NPPs (OPAS)

4.1. Place of the OPAS group in the system of emergency prevention and response

4.1.1. Urgent assistance to nuclear power plants in the case of radiation hazards or accidents is provided by the OPAS group which in its turn is a body coordinating the activities of all the organizations and resources involved in accident localization and mitigation.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.1.2 Overall management of the activities of the OPAS group is provided by OKChS of Minatom of Russia.

4.1.3 The OPAS group is established by Rosenergoatom subject to agreement with OKChS of Minatom of Russia and operates within the structure of Rosenergoatom.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.1.4 The OPAS group leader is appointed by order of the Minister of the Russian Federation for Atomic Energy upon presentation by OKChS and Rosenergoatom management.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.1.5 If the OPAS group works with OKChS or IB finding accident causes and eliminating its consequences, it would operate under their supervision.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.1.6 Responsibility of maintaining the OPAS group in constant preparedness for performance of its tasks is rested with Rosenergoatom.

4.1.7 The OPAS group members are assigned by orders of appropriate organizations. They have rights for privileges and compensations in accordance with provisions of the laws in force.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.1.8 The order of rendering urgent assistance to NPP located outside the boundaries of the Russian Federation is established according to special interstate agreements.

4.1.9 The following organizations have their representatives (as members) in the OPAS group: The Federal State Unitary Enterprise "Russian State-Owned Concern for nuclear electric power and heat generation" (Concern Rosenergoatom); Federal Authority of Russia for Nuclear and Radiation Safety Supervision; Federal Service of Russia for

Hydrometeorology and Environmental Monitoring; the Federal State Unitary Enterprise "Research and Development Institute of Power Engineering"; the Federal State Unitary Enterprise "Research, Design and Survey Institute Atomenergoproekt"; the Federal State Unitary Enterprise "Experimental design bureau Hidropress"; Russian Research Centre "Kurchatov Institute"; State Research Centre of the Russian Federation - Institute of Physics and Power Engineering named after academician A.I. Leipunsky; the Federal State Unitary Enterprise "Experimental Mechanical Engineering Design Bureau named after I.I. Africantov", Nizhny Novgorod; Research and Manufacturing Association "Taifun"; Nuclear Safety Institute, Russian Academy of Sciences (IBRAE RAN); State Research Centre of the Russian Federation Research Institute of Biophysicist of Minzdrav of Russia; the State Unitary Enterprise - lead institute "All-Russian Planning and Research Institute for Integrated Power Engineering Technology".

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

The following Ministries and officials have their representatives as members of the expert group within the structure of OKChS of Minatom of Russia, which establishes procedures for announcement, assembling and interaction, and defines tasks for localization and elimination of accidents at NPP by these ministries upon their agreement. These representatives participate directly in elimination of accidents at NPP:

Ministry of the Russian Federation for Civil Defense, Emergency and the Relief of Natural Disasters; Ministry of Health of the Russian Federation, Ministry of Internal Affairs of the Russian Federation, the Chief of Engineers of the Ministry of Defense of the Russian Federation; the Commander of radiological, chemical and biological defense forces of the Ministry of Defense of the Russian Federation; Ministry of Natural Resources of the Russian Federation.

(the paragraph is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.1.10 For the purpose of emergency assessment and forecasting, the OPAS group members may involve experts of corresponding organizations who obtain required information about the situation at the level of the OPAS group members.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.1.11. Information about the OPAS group members is checked and verified by Rosenergoatom twice a year with the interested organizations. If a member quits the OPAS group (dismissal, transfer to other work, etc.), the organization must inform Rosenergoatom about amendments and assignment of a new representative.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.1.12. Each OPAS group member must have a backup.

4.1.13. Place of assembly of the OPAS group members are offices of ERC of Rosenergoatom (Moscow, VNIIAES, Ferganskaya str., 25, 2 floor).

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.1.14. To maintain the OPAS group in constant preparedness for performance of the intended tasks, Rosenergoatom checks the announcement systems transmitting the signal "Communications test" (once a quarter), arranges learning and teaching meetings by the signal "Drill" (once a year) or NPP-based command-staff exercise with the involvement of engineering support center management transmitting the signal "Training" combining where possible the above said meetings and command-staff exercise with practical classes at the NPP.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

In case of a radiation hazardous situation or an accident at the NPP, signals "Emergency preparedness" or "Emergency" are transmitted.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.1.15. OPAS group property is kept in the offices of ERC of Rosenergoatom.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

It is prohibited to use property, technical and transport means of the OPAS group for purposes and needs having nothing to do with its functions.

4.1.16. The range of the OPAS arrangements for protection of the personnel and members of their families is the NPP territory, the control area and the NPP satellite town.

4.1.17. OPAS decisions are mandatory once they are taken jointly with ERS. Otherwise, they are advisable by nature.

4.1.18. The OPAS group terminates its operation by order of the OPAS group leader.

4.2. Main tasks of the OPAS group

The main tasks of the OPAS group are as follows:

4.2.1. Analyzing and assessing measures taken by the plant management to prevent further accident development;

4.2.2. Supervising emergency response actions of ERS and NPP personnel.

4.2.3. Developing recommendations for making decisions on approaches and methods minimizing, localizing and mitigating consequences of accidents at nuclear power plants; (as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.2.4. Working out proposals on involvement of OKChS man power and resources for accident consequence mitigation; (as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.2.5. Developing recommendations on urgent measures for protecting the plant personnel and the public using results of assessment and forecast of radiological contamination of the environment;

4.2.6. Consulting ERS and NPP personnel on questions of nuclear, fire safety, engineering, medical, radiation and chemical protection and the Unit specific design features.

4.2.7. Preparing conclusions for superior bodies on the evolution of an accident at NPP and the need for taking measures at the state (national) level.

4.2.8. Collecting and analyzing information on progress of accident localization and mitigation and on forces and means involved.

4.2.9. Consulting the operating organization on emergency termination.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.2.10. Arranging works to attract human resources, material and technical and transport facilities from other plants for performance of decontamination and repair at the affected NPP.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.2.11. Arranging interaction of the NPP special departmental teams, NPP CD civil organizations with forces and means attracted by OKChS of Minatom of Russia to perform works in the NPP control area.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.2.12. Assisting NPP in deploying decontamination stations and clothing and transport decontamination points for personnel and equipment participating in mitigation of accident consequences.

4.2.13. Arranging security of the affected NPP, protection of public order on the NPP site, evacuation of personnel from the NPP site, taking measures to prevent access of unauthorized persons, transport, etc. to the contaminated area.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.2.14. Informing as fast as practically possible the local government authorities and the population via mass media about NPP accident localization and elimination, about the use of radiation protection means.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.2.15. Developing suggestions for updating and correcting the action plan for personnel protection in case of an accident at nuclear power plant.

4.2.16. Removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

4.2.16. Making arrangements for preparation of forces and means to act in case of emergency at the NPP and supervising the implementation of preventive measures.
(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.2.17. The OPAS group shall perform tasks in the scope specified in this provision in time of war.

(Item 4.2.17 is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.3. Responsibilities of the OPAS group members

The OPAS group members report to the group leader for the whole period of its operation. They shall:

4.3.1 Arrive at the group assembly point by a signal of Rosenergoatom dispatcher and participate in the OPAS group operation.

4.2.3. Provide for completion of main tasks of the OPAS group.

4.3.3. Participate in drills and command-staff exercises.

4.3.4 Comply with safety rules and internal code of conduct.

4.3.5 Execute orders and instructions of the OPAS group leader concerning specific activities.

4.3.6. Improve professional knowledge using home and international experience.

4.3.7 Protect OPAS group property and material assets and use it in a proper way.

4.3.8 Maintain continuous communication with its organization, inform the chiefs about the situation, measures, make suggestions concerning the use of allocated and additional forces and means for mitigation of accident consequences.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.3.9. Take active part in development of proposals for improvement of structure, preparation and functioning of the OPAS group.

4.3.10. Be aware of the state of preparedness of the organization's forces and means assigned for operation in case of emergency at the affected NPP, manage their operation in case of an accident at the NPP.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

4.3.11. Inform the Rosenergoatom dispatcher on duty about any changes in residence, work or home phone numbers as well as about leaving on vacation, business trip, illness by the following tel. numbers: 220-60-01, 220-40-90.

4.4. Rights of the OPAS group members

4.4.1 The following rights are granted to the OPAS group members to ensure that they achieve their main goals, solve their tasks and perform their intended functions:

- to participate in discussions of all questions of the OPAS group activities and to made decisions;

- to bring up for discussion any issue concerning solution of main tasks of the OPAS group;

- to present in writing a "special opinion" in case of disagreement with the collective decision of the OPAS group;

- to hold a special pass for accessing an affected facility and to move within the boundaries of the affected facility on the defined routes according to the safety requirements. The special pass is granted to an OPAS member for the period of his work;

- to obtain from Rosenergoatom, NPP and involved organizations information about the radiation environment in the region of the affected facility and on the facility site; about causes of the accident, character and scope of the equipment damage, NPP operation conditions before the accident, measures for prevention of accident evolution, minimization, localization and elimination of its consequences taken by the NPP before arrival of the OPAS group and being taken at present; about implementation of measures

eliminating accident consequences and protecting the personnel, workers and employees of the enterprises (including the staff of military and fire brigades) important to operation and life of this plant; about reserved facilities and human resources at the NPP, in the region and the involved organizations; about activity of the involved organizations and progress of emergency works;

- to use all types of transport means assigned for solution of the set tasks and performance of the assigned functions;

- to use all types of communication means both in ERC of Rosenergoatom and at the affected NPP, to establish telephone and radio communication with the organizations participating in accident localization and elimination for coordination of joint efforts;

- to use any operational documentation available at Rosenergoatom, cards, schemes, situational plans, video information, data bases for each NPP and data bases from other interested organizations, to have access when necessary to the classified information;

- to use, if necessary, "battle boxes" of the OPAS group, IPM, medical supplies, shift dress, etc.;

- to enjoy free insurance as an OPAS member;

- to have the right for exemption, privileges, social protection and help as defined by the law on the same basis as any other participants of accident elimination at the NPP.

4.2.4. Apart from the rights specified in item 4.4.1 of the Provision, the OPAS group leader has the following rights:

- to solicit OKChS of Minatom of Russia for allocation of additional facilities and human resources necessary for accident localization and elimination;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

Paragraph is removed. - Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- to submit accident localization and elimination programs to OKChS of Minatom of Russia for consideration.

4.5. Responsibilities of the OPAS group members

According to the Russian laws, the head of the OPAS group is personally responsible for making justified and effective decisions, recommendations and consultations, providing credible information to the authorities, ensuring safety of the OPAS group members, and for performance of his obligations and exercise of the rights presented in the Provisions.

The OPAS group members are responsible for performance of their duties and execution of their rights specified in the Provision.

4.6. Funding the OPAS group

4.6.1. Rosenergoatom, NPP and EMERCOM of Russia provide funding to the OPAS group in the following directions:

4.6.1.1. Rosenergoatom supports the following OPAS group areas of activity using the operating organization's funds allocated for maintaining reliable and safe NPP operation:

- free insurance of experts' lives, if necessary, for the period of their OPAS membership;

- lease of necessary communications lines and systems for the OPAS and ERC operation;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- equipment of the OPAS group with necessary means of communication, means of individual protection and individual health monitoring means, belongings, documents, office equipment, transport means and their maintenance in permanent preparedness for use in case of emergency;

- support of Rosenergoatom including ERC soft and hardware complex development and modernization activities, formation, maintenance and update of data bases of the ERC local computer network;

- ESC services for accident-prevention activities;
- arrangement and conduct of accident-prevention training for the OPAS group with NPP (partially).

4.6.2. The NPP provides its own funds for the following:

- acquisition and maintenance of the facility's civil defense property, chartered to the OPAS group in case of emergency in accordance with the list (Appendix 4), arrangement of work places and provision of communication means for the OPAS group members;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- supply of regulatory and design documentation (registered copies) in accordance with the list (Appendix 5) in three copies, the first and the second copies are kept in PECC/NPP and PECC/T, while the third one is sent to the ERC of Rosenergoatom;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- communication of the NPP with the ESC of ERC of Rosenergoatom in case of emergency;

- creation and operation support of on- and off-site NPP emergency response centers;

(the paragraph is added by Amendemnt No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- operation of the stationary part of the data communication system.

(the paragraph is added by Amendemnt No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- arrangement and conduct of accident-prevention training for the OPAS group with NPP (partially).

4.6.3. Expenses related to the OPAS group activities during elimination of accidents and their consequences, are covered in accordance with Decree No.1113 of the Russian Federation Government dated November 5, 1995 "On the Universal State System of Emergency Prevention and Response"

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

5. Technical and information support of the OPAS group

5.1. EMERGENCY RESPONSE CENTER (ERC) OF ROSENERGOATOM

(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF No.1 of 8/30/2002)

Paragraph is removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

Paragraph is removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

The main purpose of the emergency response center is to arrange emergency response activities and manage these activities at the Rosenergoatom level, including the following:
(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- advanced planning of emergency response activities;
- making arrangements for emergency response activities;
- organization and conduct of accident-prevention training exercises;
- improving methodology, software and equipment used for emergency response;
- implementing decisions of the OPAS group leader on initiation of the system of notification and assembly of the OPAS and expert group members;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- implementing decisions of the OPAS group leader on providing urgent assistance to a nuclear power plant affected by an accident (use of additional corporate and industry human and material resources, material support to the affected plant in implementation of the action plan for personnel protection in case of emergency, development and implementation of accident localization and mitigation measures, urgent emergency response activities, etc.);

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- providing emergency response activities;
- performing dispatcher functions during accidents;
- communicating with the authorities, coordinating and managing interaction of the departments and organizations represented in the OPAS group;
- providing public relations and interaction with mass media.

Paragraph is removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

Paragraph is removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

ERC prepares, on an operational basis, engineering solutions for the following tasks:
(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- provision of monitoring of current status of safety of the operating NPP Units;
- maintenance of soft-and-hardware tools;
- provision of emergency response training;
- assessment and forecasting of development of a pre-accident situation and issue of recommendations how to prevent the accident;
- assessment and forecasting of the power unit state and the environment conditions in case of an accident, definition of the accident magnitude;
- issue of recommendations to the OPAS group leader on the personnel radiation protection;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- assessment of additional forces and means for localization and elimination of a radioactive discharge source at the power unit, remediation of the unit safe state;
- information and analytical support of ERC.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

Paragraph is removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

5.1.1. Operation of the Emergency Response Center

There are three operation modes of ERC depending on a situation at the NPP:

- regular daily mode;
- Emergency preparedness mode;
- emergency mode.

5.1.1.1. Regular daily mode;

In the regular daily mode, the emergency response center provides operative information to Rosenergoatom that arrives from the power units and the information from its data bases, and works to improve its own technical and program-methodical facilities.

The emergency response center ensures:

- monitoring of the operating power units' current state of safety;
- improvement of SChSK units' preparedness, preparation and conduct of emergency response training exercises;
- monitoring of protection means for the NPP personnel and their families;
- participation in creation of national and industry programs for prevention and elimination of emergency at NPP and monitoring their implementation;
- coordination of development of accident prevention systems and equipment;
- availability of technical means that operate in the regular daily mode;
- preventive maintenance and checks, repair and replacement of equipment that is not used in the regular daily mode;
- availability of vehicles for delivery of the OPAS group and technical experts to the affected NPP area, preparedness of the OPAS group belongings and facilities for use;
- test and acceptance for operation of newly introduced elements and subsystems of ERC;
- training and periodical checks of ERC personnel knowledge.

5.1.1.2. Emergency preparedness mode

The Emergency preparedness mode is the transition from routine to emergency operations. The Emergency preparedness mode is declared when especially hazardous pre-

accident conditions occur at a nuclear power plant (degradation of critical safety functions without radiological consequences, unavailability of safety systems, deviation from normal operation of the plant not described in the existing operating procedures, etc.), as well as in case of an accident with insignificant radiological consequences (category A04). Technical support centers must have a list of the states of the plant and of the reactor warranting the Emergency preparedness mode. The Emergency preparedness mode is declared by the head of OPAS group in the following cases:

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- announcement of the state of "Emergency preparedness" at the NPP;
- receipt of information from the automated radiation monitoring system about degraded radiological conditions on the site, in the controlled area, or in the plant town, or information about degraded state of a critical safety function confirmed by the plant shift supervisor with indication of the cause of the degradation.

In the Emergency preparedness mode, the ERC issues emergency notifications to the industry organizations, arranges assembling of the ERC staff, tunes the ERC equipment for extended range of monitoring of the state of the affected unit, and verifies availability of the communication system. After completion of the aforementioned actions, the ERC staff starts providing organizational and technical support to the affected plant in order to prevent the accident.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

5.1.1.3. Emergency mode

The emergency mode is initiated if the state of "Emergency" is declared at the NPP. (the paragraph is added by Amendemnt No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

In the emergency mode, the ERC manages emergency response activities and provides organizational and technical support, including the following:

- initiation of the notification system;

- provision of assembly of the OPAS and expert group members, check of their arrival and registration;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- monitoring of the power unit safe performance;

- provision of information about the emergency, measures taken and planned by the affected plant;

- preparation of the documentation (operational documents, archival documents etc.) available at the Emergency Response Center;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- establishment of reliable communication with the Information and Analytical Center of Rostekhnadzor of Russia and periodical (on request) provision of information about the state of the affected power plant and unit, radiological conditions inside the plant and on adjacent areas, on-site meteorological conditions;

(the paragraph is added by Amendemnt No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- alerting of the ERC functional zones;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- provision of supervision and assistance in implementation of the action plan for personnel protection in case of an accident at the NPP;

- recommendations on the forms of urgent support to the affected plant;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- provision of coordination of mobilization of the necessary human and material resources to support the affected plant;

- organization of transportation of the OPAS group members and necessary experts to the affected plants, deployment of the required material and human resources, technical assistance to the affected plant;

- interaction with the organizations represented in the OPAS group;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- collecting preliminary information about the state of the affected units and its essential system, about the scope of damage, radiological situation on site and in its neighborhood as necessary for decision making processes;

- obtaining and analyzing the results of emergency monitoring together with technical support centers;

- assessing and forecasting the situation on site based on analysis of the available information together with technical support centers;

- developing technical proposals on the following issues:

- assessment and forecast of the extent of the accident (state of the affected unit and environmental contamination);

- assessment of progress of implementation of the action plan for personnel protection in case of an accident at the nuclear power plant;

- recommendations on plant personnel protection;

- use of additional resources and manpower;

- localization and isolation of the radioactivity release source;

- recovery of safe state of the affected power unit;

- provision of information about the emergency, measures taken and planned by the affected plant;

- providing information to mass media.

5.1.2. ERC technical maintenance

As part of Rosenergoatom, VNIIAES provides technical support to ERC in accordance with the institute regulation.

The major ERC technical support task of VNIIAES is maintaining constant preparedness and improving methodical soft-and-hardware tools of the emergency response center as well as providing a centralized technical support to PECC/NPP.

Maintenance of ERC constant preparedness is ensured through collection and processing of main NPP operation parameters and exchange of information with ESC and PECC/NPP, training of EG members together with ESC and PECC/NPP.

These functions are performed by a special structure of NTC VNIIAES and IT.

(Item 5.1.2 as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

5.2. Engineering support centers (ESC) of emergency response centers and OPAS groups (VNIIAES, NIKIET, ATOMENERGOPROECT, EDO Hidropress, Russian Nuclear Center "Kurchatov Institute", Institute of Physics and Power Engineering, OKBM Nizhny Novgorod, Nuclear Safety Institute, Russian Academy of Sciences, Scientific Development and Production Center "Taifun", All-Russian Scientific Research and Design Institute for Energy Technology (VNIPIET), EMHPC FA "Medbioextrem") (as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF No.1 of 8/30/2002)

5.2.1. Structure of ESC

ESC set up functional units operating on a continuous basis and teams of experts that assemble in case of emergency at a nuclear power plant.

A group providing a 24 hours a day watch is established within the ESC functional unit operating on a continuous basis to collect and make primary analysis of information received from the emergency response center via communication channels.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

The ESC team of experts provides assessments, forecasts and recommendations in relation to the emergency response activities of ESC. The team is stuffed with the leading experts of the plant.

5.2.1.1. Order of ESC and ERC interaction

ESC are created for the purpose of providing engineering support to Rosenergoatom emergency response center and an affected NPP, for forecasting evolution and scope of an

accident, developing recommendations for accident management and carrying out works to mitigate its consequences.

ESC are involved in the work either by an order of the OPAS group leader (its deputy) or by a directive of a chairman of the industry emergency commission via a dispatcher on duty of Rosenergoatom or via an appropriate ERC.

Interaction between ERC of Rosenergoatom and ESC is ensured through ESC representatives - members of ERC experts group using a communication system which makes it possible to exchange information between computers, to apply telephone, telex communication, and hold audio conferences.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

Any recommendations developed by ESC following a Rosenergoatom ERC request shall only be sent to ERC. ESC is obliged to inform Rosenergoatom ERC about any requests arriving directly to ESC passing by ERC and responses to them.

5.2.1.2. Experts Team within ERC

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

A special feature about an NPP emergency is a threat or occurrence of an accident, which causes radiation damage effects. Prevention and elimination of radiation hazardous situations and accidents is a complex task of multiple industry and trans-industry structures. The OPAS group is responsible for prompt actions of emergency response resources and facilities. NPP and Rosenergoatom ERC support their constant readiness. The ERC expert group coordinates tasks improving radiation protection of personnel, public, territories.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

The ERC expert group shall provide for the following:

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- interaction among lead radiation safety experts;

- definition of main directions improving emergency response activity;
- coordination of continuous activity of the NPP ESC.

The ERC expert group is to perform the following functions:

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- development and coordination of regulatory and methodical emergency response documents concerning radiation safety;
- definition of principles and methodical bases of the integrated monitoring of radiation environment;
- working out emergency criteria, ways of emergency identification based on results of preliminary analysis of design basis and beyond design basis accidents;
- arrangement of work improving ways and means of efficient information exchange for emergency response resources;
- arrangement of work improving means of evaluation of actual radiation environment and its future change using data processing;
- working out of general procedures for operational preparation of recommendations and engineering solutions;
- arrangement of preparation of background information concerning radiation safety, which is necessary for the OPAS group in case of accident or when conducting emergency training;
- coordination of work developing emergency training scenarios;
- analysis and comparison of the current methods and the software for assessment and forecasting of accident radiological consequences and working out recommendations for their use.

The ERC expert group submits proposals to Rosenergoatom for approval.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

The ERC expert group is composed of specialists from Rosenergoatom, general designer organizations, instructors of projects and operation, chief designers, leading organizations providing engineering operation support to NPPs.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

5.2.2. ESC of VNIIAES

The main VNIIAES ESC task is scientific support of the currently operating NPPs using consolidated knowledge and operation experience.

VNIIAES experts on duty are members of the first turn of the emergency response of the OPAS group; they participate in the operative preliminary evaluation of the situation at the NPP and in the NPP region.

VNIIAES ESC supports ERC operation in the following directions:

- experts' on-call duty;
- preparation of soft and hardware complexes for operation;
- systematic processing of operational data;
- coordination of expert judgments of other ESC's NPP condition;
- provision of experts training and participation in such training;
- provision of full scale training and participation in such training.

Based on consolidated current NPP operation experience, methodical manuals and soft and hardware complexes, VNIIAES ESC performs the followings activities:

- diagnose/forecast of NPP operational occurrences;
- diagnose/forecast of NPP nuclear and radiation safety state;
- implementation of engineering solutions preventing NPP accidents;
- coordination of development of scenarios of emergency response training/drills and analysis of their results.

(item 5.2.2 is added by Amendemnt No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

5.2.3. ESC of nuclear reactor leading designers (Research & design institute of power technology, EDO Hidropress, Experimental Mechanical Engineering Design Bureau) and general designers (Atomenergoproekt, All-Russian Scientific Research and Design Institute for Energy Technology)

Involvement condition - beyond design basis flow of the accident at the reactor installation or danger of such event flow.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

Tasks to be solved by ESC in the process of the emergency response are as follows:

- evaluation of the reactor installation of the power unit affected by the accident including definition of accident causes;
- forecasting of expected ways, possible scope and supposed consequences of accident evolution;
- development of recommendations to return the affected reactor installation to the safe state, including recommendations for personnel actions to restore the critical safety function and measures to eliminate accident consequences;
- assessment of the state of equipment, compartments, NPP site;
- development of recommendations for replacement of failed equipment, decontamination of compartments and the site;
- assessment of actions of the affected power unit personnel during accident localization and mitigation of its consequences.

Information support involves all the process information available at and received on-line by Rosenergoatom ERC.

5.2.4. ESC of the Russian Nuclear Center "Kurchatov Institute", Leading scientific center.

Involvement condition - beyond design basis flow of the accident at the reactor installation with radioactivity release.

Tasks to be solved by the ESC in the process of the emergency response are as follows:

- evaluation of the reactor installation of the power unit affected by the accident including definition of accident causes;
- forecasting of expected ways of accident evolution, its possible magnitude and supposed consequences;
- development of recommendations to return the affected reactor installation to the safe state, and measures to mitigate accident consequences;

- assessment of actions of the affected power unit personnel during accident localization and mitigation of its consequences.

- assessment of isotope composition and magnitude of release.

Information support involves all the process information and data on the radiation environment in the power unit compartments available with and received on-line by the Rosenergoatom ERC.

5.2.5. ESC of the Nuclear Safety Institute, Russian Academy of Sciences (IBRAE RAN)

Involvement condition - release of radioactivity into the environment beyond the set limits.

Tasks to be performed by the ESC in the process of the emergency response are as follows:

- assessment of the situation concerning both magnitude of the accident and the radioactive contamination of the environment;

- assessment and forecasting of the release source basic characteristics;

Information support involves the release source parameters (location, altitude, diameter, etc.), emission features (dynamic parameters, start time and duration, magnitude or scope, nuclide composition, physical-chemical properties), meteorological information, automated radiation monitoring system data.

5.2.6. ESC of the Scientific Development and Production Center "Taifun"

Involvement condition - release of radioactivity into the environment beyond the set limits.

Tasks to be solved by the ESC in the process of the emergency response are as follows:

- assessment and forecasting of the weather conditions in the NPP region;

- forecasting of propagation of the radioactivity and the level of radioactive contamination of the natural environment in the territory of the region due to the NPP accident;

- forecasting of the possibility of the radioactive cloud transboundary transfer.

Information support involves information on the weather conditions in the NPP region, forecasting of the trajectory of the air masses transfer from the accident area, assessment of the natural environment contamination level in the region territory due to the accident and forecasting of the possibility of the radioactive cloud transboundary transfer.

5.2.7. EMHPC FA "Medbioextrem"

Involvement condition - an accident with threat of radiation exposure of the NPP personnel.

Tasks to be solved by the EMHPC in the process of the emergency response are as follows:

- forecasting of the medical and sanitary consequences of the Emergency;
- support of FA "Medbioextrem" CMU (MU) and TsGSEN;
- medical support of OPAS group operation in the Emergency area.

Information support involves assessment of exposure dose rates of the NPP personnel, radiation environment and dose rates for the population within the control area. (item 5.2.7 is added by Amendemnt No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

5.3. Emergency technical center (ETC)

(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF No.1 of 8/30/2002)

5.3.1. ETC is situated in Novovoronezh town and is designated for performance of the following emergency technical and rescue operations using robotic tools and special-purpose machines:

- mitigation of the radiation factor-related accident consequences at the NPP and the research reactors of Minatom of Russia;
- mitigation of the nuclear fuel transportation-related accident consequences at the NPPs of Minatom of Russia and in their control areas;

- participation in mitigation of the radiation factor-related emergency consequences in the Voronezh region territory;

- participation in elimination of emergency associated with the transportation of nuclear materials and radioactive substances in the territories of the South-Western and Southern regions of Russia.

(the paragraph is added by Amendemnt No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

5.3.2. ETC modes of operation:

"Normal activity" - activity during normal, accident free operation of the served facilities;

"High alert regime" - bringing the ETC resources to readiness on receiving a forecast of the possibility of emergency occurrence at the served facility;

"Emergency regime" - bringing the ETC resources to the affected facility to the disposal of the accident elimination leader for performance of emergency rescue operations.

ETC modes of operation are initiated by the order of the OPAS group leader.

5.4. INTEGRATED COMMUNICATION SYSTEM OF THE OPAS GROUP

The OPAS group communication system is based on the existing integrated communication system of the NPP and individual communication channels of Rosenergoatom. This system supports communications of the OPAS group and notification of its members at all emergency response phases.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

Communication centers of Rosenergoatom and NPP emergency response centers are equipped with the following technical means to alert the OPAS group members and supply them with the information as well as to manage the emergency response arrangements:

- the official long distance communication and a special mobile radio communication system "Rossa";

Paragraph is removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8

- the RAO UES of Russia Central Dispatch Office communication networks;
- the Minenergo of Russia communication networks;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- the operative-dispatch communication;
- the long-distance telephony;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- the stationary satellite communications system "Materik" and the international mobile satellite communication network "Inmarsat Mini-M";

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- cell radio communication network.

The technical means used for the OPAS group communication are telephone, teletype lines, data transfer channels, e-mail and weather data generated in the cable, radio-relay, tropospherical, radio- and satellite systems of trunk, intrazone and local communication networks.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

The equipment is maintained in constant readiness for performance of the assigned tasks.

For the period of OPAS group operation, the communication is provided by the Rosenergoatom ERC communication center mounted on a chassis of a cross-country vehicle.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

The list of communication equipment necessary for operation of the OPAS group and subject to accumulation in Rosenergoatom ERC is given in Appendix 6.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

5.4.1. Order of OPAS group members notification

5.4.1.1. The Rosenergoatom duty dispatcher notifies the OPAS group using the computer-aided emergency alarm system.

5.4.1.2. Organizations, whose representatives are OPAS group members, report home and work phone numbers of the OPAS group members, individual numbers of personal radio call receivers and phone numbers of the personal radio call operators to Rosenergoatom.

5.4.1.3. Any changes in OPAS group members phone numbers shall be reported to Rosenergoatom no later than within three days.

5.4.1.4. An NPP Emergency shall be reported to the NPP management and the Rosenergoatom duty dispatcher by the shift supervisor of the plant over the NPP notification system.

5.4.1.5. The notification system and the personal radio call system shall be tested for any problems in reporting information to the OPAS group members at least once a month.

5.4.1.6. The NPP notification system and the personal radio call system shall be tested for any problems in operation at least once a month.

5.4.2. Procedure for provision of communication support to the OPAS group

5.4.2.1. OPAS group communication is provided:

- with Rosenergoatom ERC - by an integrated system of communication of NPP operation management: using communication facilities given in item 5.4 of the Provision;
- during movement of vehicles to the NPP area where urgent assistance is rendered - from POAS MCC by radio, satellite network "Inmarsat Mini-M" and system "Rosa" and in short stops using means of communication of State Traffic Safety Authority offices;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- during air transportation - by means of communication of air fields of departure and landing and a plane (by agreement with the organization allocating the plane);

- in the areas where assistance is rendered to NPP - from the NPP protected emergency control centers using engineering facilities and NPP communication links.
(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

5.4.2.2. Manipulation of communications channels is envisaged in the communication points of the protected emergency control centers where EC/NPP and EC/NPP T are located.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

5.4.2.3. The following number of channels shall be allocated for the communication:

- Rosenergoatom ERC - NPP (constant wire - 2 - 2, satellite links - 2 - 3, trunk wire leased by order - 2 -3);

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- Rosenergoatom - ESC (for telephone communication channels - 1 - 2);

- The types and the number of channels are defined and approved by the NPP management in the NPP area.

5.4.2.4. Communication channels, leased in accordance with the provision for the order of meeting the Rosenergoatom requirements for the equipment of the Russian Federation public communications network, are connected to the communication points of the protected emergency control centers PECC/T and PECC/NPP with the possibility of their recrossing to an NPP communication center of stable operation. In Rosenergoatom, the additional channels are connected to the safety-alarm device of the Emergency Response Center.

(item 5.4.2.4 as amended by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

5.4.2.5. Accommodation of additional channels by communications centers of NPP and Rosenergoatom is ensured within 5 hours since the moment when a communications enterprise of Minsvyaz of Russia got an application for a channel allocation.

(item 5.4.2.5 as amended by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

Consultant Plus: Note.

Evidently there is a misprint in the official content of the document: it should be Order of Minsvyaz of RF No.93 of 13.04.1994, not of 14.04.1994.

5.4.2.6. Following the password "Disaster" the long-distance calls shall be made, according to the Order of Minsvyaz of Russia of April 14 1994 No.93, by four managers and a dispatcher of Rosenergoatom and all NPPs' directors.

5.4.2.7. The password "Disaster" calls can be made from any tel. number specified by the subscriber and from a public call office or from a postal telegraph office.

5.4.3. Preparedness of the communication equipment and reliable operation of the communication channels are provided by:

- NPP - within a 5-km zone around the NPP and in the NPP protected on-site emergency control centers;
- a local department of civil defense and Emergency management in the region - within a 30-km zone around the NPP (communication for interactions and electromagnetic compatibility of radio facilities, involved forces and means);
- Rosenergoatom - in the interests of the OPAS group;
- MCCICCT - concerning provision of trunk channels between Rosenergoatom and the NPP.

5.5. TRANSPORTATION FACILITIES OF THE OPAS GROUP

The OPAS group is provided with transportation vehicles that are in hot standby 24 hours and are always in the disposal of Rosenergoatom.

Transportation vehicles of the OPAS group enable urgent assembly of OPAS group members and technical experts, their transportation to the Rosenergoatom ERC and to the affected nuclear power plant.

5.5.1. The OPAS group transportation facilities include:

Motor vehicles on the balance sheet of Rosenergoatom:

- cars (of Volga type) 3 pieces staying on a 24 hours duty to provide for urgent assembly of necessary experts and specialists;

- mini vans with 10 - 12 seats (2 cars in "hot standby") for delivery of necessary forces and means to the airport of departure and to NPP located as far as 600 km from Moscow (Kursk, Smolensk, Kalinin, Novovoronezh).

- minivan (6-7 seats) of OPAS MCC for organization of
(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- mini truck (of Gazel type).

All the above listed motor vehicles of the OPAS group shall be registered in GAI MVD of Russia as special purpose transport.

The motor vehicles of the OPAS group shall be equipped with:

- a flasher;
- a voice loudspeaker;
- a radiotelephone;
- personal call devices;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- dosimeter monitoring and radiation survey equipment.

Aviation transport for fast carrying of the OPAS group members to the affected NPP:

- airplanes of SVAE of EMERCOM of Russia by a contract (agreement) between SVAE EMERCOM of Russia and Rosenergoatom;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- airplanes of other aviation enterprises according to agreements signed by Rosenergoatom. The right to choose between the aviation enterprises is granted to Rosenergoatom.

The OPAS group is transported to the affected NPP region by routs as follows:

- The Balakovo NPP - airport Balakovo;
- The Beloyarsk NPP - airport Koltsovo;
- The Bilibino NPP - airport Kiperveem (Pevek);
- The Kola NPP - airport Kirovsk (Afrikanda);
- The Kursk NPP - airport Kursk;
- The Novovoronezh NPP - airport Voronezh;
- The Kalinin NPP - carrying on board the helicopter (Mi-8) directly to the plant;
- The Smolensk NPP - carrying on board the helicopter (Mi-8) directly to the plant;
- The Leningrad NPP - airport Pulkovo;
- The Rostov NPP - airport Volgodonsk;

(the paragraph is added by Amendemnt No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

To provide for storage of the OPAS transportation facilities, Rosenergoatom arranges special boxes equipped with the electrical power and heat supply systems, accumulators charging units and a warning system sending the alarm signal to the guard station.

Rosenergoatom develops, updates on-line, and stores in the local computer network of the Emergency Response Center the following information about OPAS group transportation facilities:

- routes of assemblage and delivery of the OPAS group members and technical experts to Rosenergoatom ERC;
- routes and time of delivery to the affected NPP;
- list of necessary materials and spare parts;
- telephone numbers for fast communication with the auto transport, aviation enterprises providing for the OPAS group carrying to the affected NPP, departure airports in Moscow.

5.5.2. The order of use of OPAS group transport facilities in NPP normal operation and in emergency is as follows:

5.5.2.1. In the state of normal operation conditions

The Rosenergoatom dispatcher on duty performs control of the OPAS group auto transport by orders of the concern head.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

Availability of the operative motor transport of the OPAS group is ensured by the Rosenergoatom transport service.

5.5.2.2. In the state of emergency

Based on the information about an Emergency at a nuclear power plant and the decision of the chairman of Minatom Committee for Emergency Control about the need and forms of urgent assistance to the affected plant, the head of the OPAS group directs Rosenergoatom dispatcher to assemble the members of OPAS group. The OPAS group auto transport shall be used for these purposes and for further delivery to the airport and NPP.

6. Order of announcement of emergency and prompt information communication

6.1. Order of announcement of the state of "Emergency preparedness" at the NPP

6.1.1 In case of detection of violation of the NPP safe operation limits and/or conditions, when the equivalent dose rate or the volumetric activity of iodine-131 in the air reaches the level of the state " Emergency preparedness" (criteria for announcement of the state of " Emergency preparedness" and "Emergency" at NPP are given in Table 1), and in case of threat to NPP safety in fires and natural disasters, in violation of NPP safety conditions, which may lead to a radiation accident, the operation personnel shall immediately:

- inform the official along the line of subordination, up to the SSP, about the situation;
- take necessary and available measures to provide assistance in case of injuries, threat to human life and personnel exposure in excess of allowable limits;
- take necessary and available measures to eliminate the identified violation and/or to minimize its consequences.

CRITERIA OF ANNOUNCEMENT OF
"EMERGENCY PREPAREDNESS" AND "EMERGENCY" AT THE NPP

N of item	Controlled parameter, place of control	State "Emergency preparedness"	State "Emergency"
1.	Equivalent doze rate ($\mu\text{Sv/h}$)		
1.1	Compartments of permanent occupation in CAA	> 10	> 600
(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)			
1.2.	Territory of the NPP site and CAA	> 2.5	> 200
(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8			
1.3.	Territory of NPP control area	> 0.1 <*>	> 20
(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)			
2.	Volumetric activity of iodine-131 in the air (Bq/cubic m)		
(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)			
2.1.	Compartments of permanent occupation in CAA	> 1,100	> 2.9 x 10
(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)			
2.2.	Territory of the NPP site and CAA	> 275	> 9.7 x 10
(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)			
2.3	Territory of NPP control area	> 7	> 670 <***>
(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)			

<***> Established for the critical group (children aged 1 - 8 years old).

<*> Excess of the natural background.

(the reference is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

<***> Set for the critical group (children of 1 - 2 years old).

(the reference is added by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

6.1.2. Upon receiving information about presence of facts testifying possible occurrence of a radiation hazardous situation or an accident, the Shift Supervisor of the plant shall identify the current situation and shall initiate announcement according to the list of violations of the NPP safe operation about which the NPP directorate must immediately inform (Table 2)

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

LIST OF
VIOLATIONS OF NPP SAFE OPERATION
THAT NPP DIRECTORATE MUST IMMEDIATELY REPORT

Description of operational occurrences	Those who shall be informed about all types of NPP operational occurrences
Declaration of the state "Emergency preparedness" Declaration of the state "Emergency" Fire that can lead to a radiation accident Natural disasters (earthquakes, storms, flooding, etc.) that can result in a radiation accident Attempts of criminal elements to take illegal actions, that can lead to a radiation accident	Duty dispatcher of Rosenergoatom SCMC of Minatom of Russia Territorial bodies of CD and emergency management of the NPP town and the region (autonomous district) Chief of Authority of Gosatomnadzor of Russia at a given NPP Regional environment supervision committee Duty operator of a corresponding region of Gosgortekhnadzor of Russia (in the case of NPP element (elements) damage, registered in the organizations of Gosgortekhnadzor of Russia) Heads of administration of the NPP town and the region (autonomous district) Dispatcher of a corresponding department of the RAO UES of Russia electric energy system" (in a case envisaged by the valid provision about interaction of the NPP and the power supply system)

<p>(as amended by Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8)</p>	<p>NPP medical unit SFSS division for NPP safeguard and the regional fire fighting brigades Military unit of the MVD Interior Troops safeguarding the NPP (officer on duty, officer of the guard) Agencies of MVD of Russia and FSB of Russia, supporting the NPP Territorial office of Rosgidromet supporting the NPP Organizations of other ministries and departments in the NPP territory and in CAA Administration of settlements within the 5km zone around the NPP OKChS of Minatom of Russia (to be informed by the NPP management)</p>
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Note: If there is no communication with the Rosenergoatom duty dispatcher, SSP shall communicate the information about NPP operational occurrences to the ERC duty dispatcher.

(the note is introduced by Change N.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

For the purpose of acceleration of notification and timely arrangement of minimization and elimination of emergency, the SSP:

- reports directly to the NPP Director and the Chief Engineer, Rosenergoatom duty dispatcher, SCMC of Minatom of Russia, local department of civil defense and Emergency management of the NPP town and of the region (autonomous district);

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- simultaneously, charges the person, earlier appointed by the NPP Manager's order, with reporting to head of the inspection division of Gosatomnadzor of Russia and notification of other parties:

the environment committee in the region;

the duty operator of the corresponding district of Gosgortekhnadzor of Russia;

head of administration of the NPP satellite town and the region (autonomous district);

the dispatcher of the corresponding management of the power system;

NPP medical sanitary station;

SFPS division in charge of NPP security and the regional body for the fire protection service;

military unit of VV MVD of Russia protecting the NPP;

bodies of MVD of Russia and FSB of Russia servicing the NPP;

the Rosgidromet territorial body servicing the NPP;

organizations of other ministries and departments in the territory of the NPP and the control area;

administrations of population centers within the 5km zone around the NPP, in addition, the SSP submits information to the local department of civil defense and Emergency management of the NPP town and of the region and to the Rosenergoatom duty dispatcher in accordance with the established procedure.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

In case of occurrences similar or above the categories from П02 to П11 (Appendix 1), the operational information about NPP operational occurrences shall be provided in accordance with п. п. 3.2.1.4, 3.2.1.5 и 3.2.1.6 Provision on the procedure of investigation and accounting of NPP operational occurrences (PNAE-G-12-005-97);

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- arranges, whenever required, radiation reconnaissance and examination of equipment, compartments, and communications by operating personnel with the aim of establishing the causes, sources, and scope of the NPP operational occurrence as required by Appendix 1.

6.1.3 Upon receiving the initial information about the nature of occurrence, assessment and forecasting of the situation evolution from SSP, the NPP Manager (Chief Engineer), where necessary or reasonable, makes a decision to declare the state of "Emergency preparedness" at the NPP and issues a corresponding order to SSP and the Chief Headquarters for CD and emergency (or a substitute person).

In the absence of the NPP Manager (Chief Engineer), a decision to declare the state of "Emergency preparedness" is made by SSP.

6.1.4 The appropriate NPP personnel and equipment is set to the state of preparedness when the state of "Emergency preparedness" is declared at the NPP. It is assumed that there is time for taking precautionary measures and constructive actions to prevent an accident or mitigate its consequences.

6.1.5 A decision to declare the state of "Emergency preparedness" at the NPP is brought, by the SSP order, to attention of the NPP personnel using the available means of communication and announcement.

6.1.6 After declaration of the state of "Emergency preparedness" at the NPP, SSP immediately informs the NPP management about taking necessary protection measures in the case of possible unfavorable evolution of the situation or about taking measures to prevent the accident.

6.1.7 Responsibility for taking necessary measures to ensure NPP safety during the state of "Emergency preparedness", before arrival of the NPP director (Chief Engineer), rests with SSP

6.2. Order of announcement of the "Emergency" at NPP

6.2.1 In case of a radiation hazardous situation or an accident at the NPP, when the equivalent dose rate or the volumetric activity of iodine-131 in the air reaches the level of the state "Emergency" (see criteria for announcement of "Emergency preparedness" and "Emergency" at NPP in Table 1), the NPP personnel shall immediately:

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- inform the official along the line of subordination, up to the SSP, about the situation;

- take necessary and available measures to provide assistance in case of injuries, threat to human life and personnel exposure in excess of allowable limits;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- take necessary and available measures to localize the accident and mitigate its consequences.

6.2.2 Upon receiving information about the radiation hazardous situation or an accident at the NPP, SSP shall identify the current situation and immediately report in person to the NPP Director and the Chief Engineer, duty dispatcher of Rosenergoatom, SCMC of Minatom of Russia, local department of civil defense and Emergency management of the NPP town and of the region (autonomous district). Simultaneously, charges the person, earlier appointed by the NPP Manager's order, with reporting to head of the inspection division of Gosatomnadzor of Russia and notification of the environment committee in the region, the duty operator of the corresponding district of Gosgortekhnadzor of Russia, heads of administration of the NPP satellite town and the region, the dispatcher of the corresponding management of the power system, NPP medical sanitary station, SFPS division in charge of NPP security and the regional body for the fire protection service, military unit of VV MVD of Russia protecting the NPP; bodies of MVD of Russia and FSB of Russia servicing the NPP, the Rosgidromet

territorial body servicing the NPP, organizations of other ministries and departments in the territory of the NPP and the control area, administrations of population centers within the 5km zone around the NPP. In addition, the SSP submits information to the local department of civil defense and Emergency management of the NPP town and of the region and to Rosenergoatom duty dispatcher in accordance with the established procedure;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

SSP arranges, whenever required, radiation reconnaissance and examination of equipment, compartments, and communications by operating personnel with the aim of establishing the causes, sources, and scope of the accident.

SSP is made responsible for the initial assessment of the radiation hazardous situation or an accident and forecasting of the radiation environment off-site the NPP, and for the identification of NPP operational occurrence according to Appendix 1.

6.2.3 Upon receiving the initial information about the nature of occurrence, assessment and forecasting of the situation evolution from SSP, or upon getting acquainted with the situation on-site, the NPP Manager (Chief Engineer), where necessary and based on criteria for announcement of the states "Emergency preparedness" and "Emergency" (Table. 1), makes a decision to declare the state of "Emergency preparedness" at the NPP, to introduce the Action Plan protecting the personnel in case of an NPP accident and issues a corresponding order to SSP and the Chief Headquarters for CD and emergency (or a replacing person).

In the absence of the NPP Manager (Chief Engineer), a decision to declare the state of "Emergency" and to introduce the Action Plan to protect the personnel in case of an NPP accident is made by SSP.

6.2.4 Removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

6.3. Order of making notifications in case of radiation hazardous situations or accidents at
NPP

6.1.3 In case of radiological hazard or an accident at an NPP, the plant management and the local department of civil defense and Emergency management of the NPP town immediately notifies the plant personnel, as well as personnel of the enterprises and organizations within 5 kilometers from the plant and in the plant town using all available means of communication and notification.

6.2.3 The NPP town population, enterprises and organizations that provide for construction, functioning and life of the NPP (including the military troops and fire brigades staff), population of settlements within the 5 km zone around the NPP is notified simultaneously by the NPP management and the territorial departments for civil defense and Emergency management of the NPP town in accordance with the plans of protection of personnel and population in case of radiation accident at NPP.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

6.3.3. A communication and notification system for notifying and supplying information to the NPP management within the 5 km zone around the NPP and the NPP town is developed and a local notification system is created.

To ensure communications extending the 5 km zone around the NPP but remaining within the boundaries of the administrative-territorial entity (region, district, republic within the Russian Federation), the NPP management submits an application to the local communication agencies and concludes an agreement with them stipulating the order of interaction with the communication agency dispatch service, allocation of additional communication lines in case of Emergency at the NPP and terms of compensation for these services.

To ensure communications extending the administrative-territorial entity where the NPP is sited (region, district, republic within the Russian Federation), Rosenergoatom concludes an agreement with the Main Control Center for Long Distance Communications and Television stipulating the order of interaction with the Center dispatch service, allocation of additional communication lines in case of emergency at the NPP and terms of compensation for these services.

6.3.4. Instructions for actions of the NPP operation personnel and management (with attached notification and communication flow charts) at the stage of revealing causes and sources of the emergency, announcement of "Emergency preparedness" and "Emergency" at NPP are developed on the basis on this provision. The instructions are signed by the Chief Engineer, confirmed by the Director and retained by the shift supervisor of the plant.

To maintain the notification system in constant preparedness, the NPP management carries out quarterly checks of this system's equipment availability.

6.4. Order of on-line information communication in case of radiation hazardous situations and accidents at NPP

6.1.4 Initial information about accidents must be concise while adequately reflecting the actual state of the affected plant and providing information about necessary emergency response actions. Wherever necessary, additional accident details can be communicated at a later date.

6.2.4 It is necessary to distinguish between information about actual emergency and information in Training Centers.

6.4.3. All communicated information about radiation hazards and accidents at the NPP must be registered according to the established procedure specifying the date, time of communication and persons communicating and receiving the information.

6.4.4. Upon declaring the NPP states "Emergency preparedness" and "Emergency" and introducing the Action Plan to protect the personnel in case of an accident at the NPP, SSP (or an NPP official by his order) immediately reports the NPP situation to:

- ROSENERGOATOM Emergency Response Center duty dispatcher;
- SCMC of Minatom of Russia;

(the paragraph is added by Amendemnt No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- territorial departments of civil defense and Emergency management of the NPP satellite town and of the region (autonomous district) in the territory of which the NPP operates;

- Head of Authority of Gosatomnadzor of Russia at the NPP;
- the environment committee in the region;
- the duty operator of the corresponding district of Gosgortekhnadzor of Russia;
- heads of administrations of the NPP town and the region (autonomous district) in the territory of which the NPP operates;
- the dispatcher of the corresponding management of the power system;
- NPP medical unit;
- SFPS division in charge of NPP security and the regional body for the fire protection service;
- military unit (division⁰ of VV MVD of Russia protecting the NPP);
- bodies of MVD of Russia and FSB of Russia servicing the NPP;
- territorial agency of Rosgidromet;
- organizations of other ministries and departments in the territory of the NPP and the control area;
- administration of settlements situated within the 5 km zone around the NPP.

SSP supplies immediately all the additional and verified information on the NPP Emergency to the Rosenergoatom duty dispatcher.

During the first hour after the start of an accident at the NPP, SSP (or an NPP official by his order) must supply the following information to the Rosenergoatom duty dispatcher for subsequent forecasting of radiation environment at the NPP in Rosenergoatom ERC and Rosgidromet:

- name of NPP and number of NPP power unit;
- date and time of the accident;
- unit state before the occurrence took place;
- radiation environment in NPP compartments and in nearby territory;

(the paragraph is added by Amendemnt No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- supposed causes of the accident, brief description of the accident, total number of radioactive products released in the environment as a result of the accident, their approximate isotope composition.

- unit state at the moment of information submission;

- brief description of weather conditions during and after the accident in the NPP region (temperature of air, cloudiness, speed and direction of wind at various altitudes).

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

SSP sends more exact and additional information on emergency discharge, situation at the NPP, core condition, radioactive contamination in the control area and nearby, radiation levels to Rosenergoatom duty dispatcher on his demand.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

The Rosenergoatom duty dispatcher supplies the received information to Rosgidromet immediately.

The following information must be supplied according to the established order not later than 2 hours after the notification and then daily by 6 p.m. (Moscow time).

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- measures on protection of the population and the territories, conduct of emergency operations and other urgent assistance;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- information on manpower and facilities involved in elimination of Emergency;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

more exact and additional information on emergency discharge, situation at the NPP, core condition, radioactive contamination in the control area and adjacent territory, radiation levels (forwarded to Rosenergoatom dispatcher on duty on his demand).

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

The Rosenergoatom duty dispatcher forwards immediately the received information to SCMC of Minatom of Russia;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

The Rosenergoatom duty dispatcher reports on the situation at the affected NPP to:

- the head of the OPAS group;

Paragraph is removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8

- SCMC of Minatom of Russia;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- a duty operator of Gosatomnadzor of Russia;

Paragraph is removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8

- the FA "Medbioextrem" of Russia duty operator;

- the Rosgidromet duty operator;

- other interested organizations and departments using duty telephone numbers on a special list according to the category of NPP operational occurrence and the OPAS group members notification flow sheet.

- ROSENERGOATOM ERC duty dispatcher;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

Paragraph is removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

Paragraph is removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

The system of notification and deployment of the technical support centers of Rosenergoatom ERCs and OPAS group in case of an accident or radiation hazard is given in Appendix 2.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

NPP Director (or a replacing person) informs:

- the Rosenergoatom management on the causes of announcement of the Emergency and instruction of the Action Plan protecting the personnel in the case of an accident at the nuclear power plant;

- the chairman (deputy chairman) of the Branch Commission for Emergency of Minatom of Russia and the OPAS group leader on measures taken to eliminate the accident, reports on the accidents magnitude estimation and an expected spread of radioactive contamination, applies to them, if necessary, for urgent assistance to the NPP;

- head of the regional and local administration.

The Rosenergoatom management informs:

The Minister of the Russian Federation for atomic energy, the chairman of the Branch Commission for Emergency of Minatom of Russia on the measures taken by the Concern, on the necessity for rendering quick centralized assistance.

SCMC of Minatom of Russia informs, by decision of OKChS of Minatom of Russia: (as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002) international organizations and mass media on the measures taken by OKChS of Minatom of Russia and makes a decision to supply urgent assistance to the NPP and send the OPAS group to the affected NPP as required by the Emergency significance.

Paragraph is removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

The OPAS group leader makes decisions about:

- assembling OPAS group members;

- setting ETC to high alert regime and moving the main unit of the ETC duty echelon to the affected NPP.

6.4.5. Removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

6.4.5. To ensure the operational forecasting of radioactive cloud transboundary transfer in case of beyond limits releases (discharges) of radioactive substances as a result of NPP accident, the Rosenergoatom dispatcher supplies immediately after receipt of the accident data, the following information to Rosgidromet:

- name of NPP and number of NPP power unit;

(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

- date and time of the accident;

(in version of -Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

- unit state before the occurrence took place;

(in version of -Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

- radiation environment in NPP compartments and in nearby territory;

(in version of Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- supposed causes of the accident, brief description of the accident, total number of radioactive products released in the environment as a result of the accident, their approximate isotope composition;

(in version of Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

unit state at the moment of information submission;

(in version of Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- brief description of weather conditions during and after the accident in the NPP region (temperature of air, cloudiness, speed and direction of wind at various altitudes).

(in version of Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

Rosenergoatom duty dispatcher sends more exact and additional information on emergency discharge, situation at the NPP, core condition, radioactive contamination in the control area and the nearby territory, radiation levels to Rosgidromet on demand.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

6.4.6. By results of preliminary information and forecast data, Rosgidromet transmits during 6 hours the conclusion about possible radioactive cloud transboundary transfer of contaminated air masses and forecasts to Minatom of Russia as additional verified accident data arrive.

6.4.8. Removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

7. PROCEDURE OF ARRANGEMENT OF URGENT ASSISTANCE TO NUCLEAR POWER PLANTS BY THE OPAS GROUP IN CASE OF RADIATION HAZARDS AND ACCIDENTS AT THESE PLANTS

7.1. Order of notification, assemblage and transportation of OPAS group members to the affected NPP

7.1.1. Based on the information about an Emergency at a nuclear power plant and the decision of the chairman of OKChS of Minatom of Russia about the need of urgent assistance to the affected plant, the head of the OPAS group directs Rosenergoatom dispatcher to assemble the members of OPAS group and directs the Emergency Response Center man on duty to assemble the expert group members.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

The man on duty of the Emergency Response Center notifies technical support centers of the Emergency Response Center and OPAS group, and informs them about the order of the OPAS group leader to fully deploy the centers. The scheme of notification and deployment of the technical support centers of Rosenergoatom Emergency Response Centers and OPAS group in case of an accident or radiation hazard is given in Appendix 2.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

7.1.2. Notification, assemblage and transportation of the OPAS group members is organized by Rosenergoatom.

7.1.3 In case of an NPP accident and upon receiving an order to assemble the OPAS group members, the Rosenergoatom dispatcher explains the scheme of notification of the OPAS group members or the organizations from which they are assigned and sends the operational vehicles from 24.00 till 6.00 for the OPAS group members to move them from Rosenergoatom by the developed routes. Other OPAS group members shall arrive by their duty transport means. In the rest of the time, team members use the public transport. The OPAS group members notification is done with the message acknowledgment by the notified party and registration of the time of notification in written form in the dispatcher's log. All notifications communicated and received by the dispatcher in the NPP accident shall be recorded on the magnetic tape.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

7.1.4. To ensure the OPAS group members delivery to the affected NPP, the Rosenergoatom dispatcher calls the dispatcher of EMERCOM of Russia aviation service or a squadron which supports the OPAS group and conveys the following information:

- name of the NPP where the OPAS group needs to be transported;
- number of the OPAS group members (up to 25 people) and the luggage weight (total mass of a passenger plus luggage should not exceed 3,5 tons).
- full name and position of the OPAS group leader;
- expected time of start or departure from the airfield of the OPAS group;
- full name of the chairman of OKChS of Minatom of Russia who made a decision to provide emergency assistance to the NPP.

Simultaneously the Rosenergoatom duty dispatcher informs the departure airport about the need for receiving and dispatching the squadron airplane servicing the OPAS group besides the regular flight schedule due to emergency at the NPP.

7.1.5. Not later than 1 hour after the information transfer as required by item. 7.1.4 of the Provision, the Rosenergoatom duty dispatcher asks the dispatcher of EMERCOM of Russia aviation or a squadron which supports the OPAS group to convey the following information:

- time of departure;

- expected time of arrival to the airport (airfield) of destination en route of OPAS group members transportation;

- preparedness of vehicles or helicopters in the airport (airfield) of arrival for transportation of the OPAS group from the airport (airfield) to the affected NPP site (in accordance with the approved OPAS group members transportation routes);

- full name of the person in EMERCOM of Russia aviation or a squadron supporting the OPAS group responsible for arrangement of OPAS group members transportation;

- number of flight, type, tail number and name of the chief pilot.

Simultaneously, the Rosenergoatom duty dispatcher informs the dispatcher of EMERCOM of Russia aviation or a squadron supporting the OPAS group as well as the Manager (Chief Engineer) of the affected NPP on the following:

- expected time of arrival of the OPAS group to the airport (airfield) of departure;

- full name and position of the person responsible for meeting the OPAS group members at the airport (airfield) of arrival.

Simultaneously, the Concern dispatcher gets confirmation from the shiftable manager of the airport of departure about readiness to receive the airplane of the squadron supporting the OPAS group beyond the daily regular schedule.

7.1.6 The dispatcher of SUAE EMERCOM of Russia or the aviation enterprise servicing the OPAS group informs the Rosenergoatom duty dispatcher on the actual time of departure of the airplane with the OPAS group on board and the actual time of its arrival to the airport of destination.

7.1.7 The Rosenergoatom duty dispatcher informs the NPP Manager or the Chief Engineer on the actual time of departure of the airplane with the OPAS group on board and the actual time of its arrival to the airport of destination.

7.1.8 The NPP Manager or the Chief Engineer verifies the information about the content, terms and route of arrival of the OPAS group and arranges for its delivery from the airport of destination to the NPP.

7.1.9. Amount of time for assemblage of the OPAS group members in the first notification turn - two hours during the working time and six hours outside working time.

7.1.10. The order and terms of the OPAS group arrival to the affected NPP in the second notification turn are determined by decision of the OPAS group leader.

7.2. OPAS group operation during definition of the need and the scope of assistance to the NPP affected by the accident

7.2.1 Before departure to the affected NPP:

7.2.1.1. Upon receiving information about the radiation hazard at the NPP, the OPAS group leader

- instructs the dispatcher of Rosenergoatom to assemble OPAS group members;
- orders to transfer the emergency technical center to the “increased preparedness” mode and to send a man on duty of the emergency technical center, and the second tier forces of the emergency technical center wherever necessary, to the affected nuclear power plant;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- informs the arriving OPAS group members about the event, about the measures planned and undertaken by the plant, consults with the OPAS group members and makes decision about the form of urgent support to the plant and the number of experts to be involved in it;

- prepares information to the authorities about the event and about the measures planned and undertaken by the plant.

7.2.1.2. The following factors are taken into consideration by the OPAS group members when making a decision:

- possible state of the reactor and its safety critical systems;
- adequacy of measures undertaken by the plant management to prevent further accident development;
- implementation of the Action plan for personnel protection in case of an accident at the nuclear power plant;

- expected significance of the emergency radiation releases and radioactive contamination levels at the NPP;
- high-priority actions for mitigation and possible elimination of radioactive releases outside the NPP site boundaries;
- need for involvement of additional resources of OKChS of Minatom of Russia ;
(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)
- need for involvement of centralized facilities and transport means to carry out decontamination and repairs at the affected NPP;
- need for initiating the second turn of annunciation for the OPAS group members;
- involvement of additional experts from the interested ministries, departments and organizations to work in the OPAS group;
- ways of accident consequences mitigation;
- content of the OPAS group to be sent to the affected NPP;
- condition of the NPP security.

7.2.2. On arrival to the affected NPP

On arrival to the affected NPP, the OPAS group gets the following information from the NPP Manager or the replacing person:

- state of the affected reactor and its safety critical systems;
- measures that have been taken and that are being taken to localize the accident and to eliminate its consequences;
- measures that have been taken to protect the personnel;
- radiation situation at the NPP, in the buffer area and the radiation control area;
- fire situation at the NPP;
- engineer situation in the region of the alarm object;
- road network condition and access ways to the place of the accident;
- nature and level of destruction;
- implementation of the Action plan for personnel protection in case of an accident at the nuclear power plant;

- condition of material, technical and transport support of the emergency response actions;

- manpower and facilities that have been used and that are being involved for the purpose of accident elimination;

- notification of the corresponding organizations about the accident;

- measures that have been taken for safeguarding the affected NPP.

Based on the supplied information, the OPAS group members perform analysis and make conclusions about correctness of actions of the NPP management to localize and eliminate the accident, and if these actions are considered insufficient in term of qualification, timely response and technical substantiation, the OPAS group leader has the right to ask OKChS of Minatom of Russia and the Minister of Atomic Energy of the Russian Federation to relieve the supervisor of works in the buffer area of his duties and to recommend a candidate for his replacement.

7.3. Actions of the OPAS group members when the Emergency is announced

7.3.1. Actions of the OPAS group leader

7.3.1.1. Making decision:

- about assembling OPAS group members;

- about the time of departure of the OPAS group members to the affected NPP;

- about deployment of the ETC resources to the affected NPP.

7.3.1.2. Provision of operative information to OKChS of Rosatom, municipal and regional authorities, ministries and departments, and mass media about the nature of the event, planned and undertaken measures to localize and mitigate it, and the progress of mitigation activities.

7.3.1.3. Arrangement of activities of the OPAS group members for solution of their assigned tasks, performance of duties, and execution of their rights in the scope specified in the Provision.

7.3.1.4. Application to OKChS of Rosatom asking for allocation of its facilities for the accident elimination if the magnitude of the accident is such that the OPAS group is unable to localize the accident and to mitigate its consequences on its own.

(item 7.3.1.4 as amended by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

7.3.1.5. Support of operational communication with the emergency response work supervisor in the buffer area, SSP, the OKChS of Rosatom Chairman, local and regional authorities managers, heads of the organizations allocating their facilities for mitigation of accident consequences.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

7.3.1.6. Holding of meetings, press-conferences, consultations, etc. with participation of the OPAS group members.

7.3.1.7. Approval and acceptance of reports, conclusions, recommendations and other documents concerning OPAS group decisions.

7.3.1.8. Supervision over solution of issues concerning material, technical, financial and legal support of the OPAS group members as well as organizational issues.

7.3.1.9. Obtaining permissions to perform accident localization and elimination works in the presence of the radiation contamination.

7.3.1.10. Arrangement of a strict radiation monitoring of the persons participating in the accident consequence mitigation, and of the sanitary access mode.

7.3.1.11. Coordination of the OPAS group members' actions following the radiation monitoring in the accident area.

7.2.3. Actions of the OPAS group members

7.3.2.1. Removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8

7.3.2.1.1. Removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8

7.3.2.1. Actions of the Rosenergoatom representatives

Based on the actual data about the radiation environment:

a) assessment of adequacy and timeliness of the taken measures concerning:

- iodine prophylaxis of the NPP personnel;

- hiding of the NPP personnel and their families in protective constructions (shelters, fall out refuges, etc.) or evacuation of the NPP personnel and their families to the safe region if necessary;

- deployment of special department formations and civil organizations of NPP CD and their preparedness for emergency response operations;

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

- assessment of the accident judging by the radiation emission (isotope and disperse contents of the release, temperature drop at the outlet, speed of emission (m/s), time of the accident);

- giving advice to the local authorities for the iodine prophylaxis and procedure of evacuation of the population living in the "trace" shadow;

b) solution of issues concerning localization and elimination of accident consequences:

- arrangement of development and implementation of high-priority actions for mitigation and possible elimination of radioactive emission outside the NPP site boundaries;

- supply of practical assistance to the NPP management implementing measures for protection of the NPP personnel and their families;

- provision of on-line solution of issues concerning arrangement of delivery of necessary materials, equipment, technique and IPM to the affected NPP;

- arrangement of transportation of necessary specialists to the affected NPP from other NPPs;

- arrangement of fast deployment of the involved facilities from the interested ministers and departments at the affected NPP and coordination of their actions by the OPAS group members;

- supply of assistance to the NPP management arranging communication required for the OPAS group operation;

- provision of systematic preparation and delivery of information on the accident and taken measures to the superior authorities and mass media;

- supply of assistance to the NPP management implementing additional measures to reinforce the NPP physical protection.

7.3.2.2. Actions of the general designer (ATOMENERGOPROECT and VNIPIET) representatives:

- participation in the development of measures for establish ways and means of minimization, localization and elimination of the accident at the NPP;

- performance of works to assess the level of damage to the civil engineering structures, failures of main and auxiliary NPP systems to perform their functions;

- arrangement of on-line development of design solutions for the process systems required for the localization of the accident and mitigation of its consequences;

- participation in development of engineering solutions for implementation of emergency recovery measures.

7.3.2.3. Actions of the scientific supervisor (the Russian Nuclear Center "Kurchatov Institute", Leading scientific center) and the operation scientific supervisor (VNIIAES):

- participation in the assessment of the state of the reactor and its safety critical systems, in the development of means of minimization, localization and elimination of accidents at the NPP;

- control of completeness of measures taken for cooling down the core, spent fuel pool and for assuring nuclear safety;

- discussion and development of proposals for emergency cooldown of the core in case of failure of the safety critical systems;

- development of proposals for the expected emission of radioactivity during the expected accident evolution;

- discussion and development of proposals for ways of prevention, localization and elimination of primary sodium fires;

- discussion and development of proposals for prevention of interaction of the primary sodium with water, generation and accumulation of explosive mixtures of oxygen and hydrogen.

7.3.2.4. Actions of the chief designer (EDO Hidropress, Research & design institute of power technology, Experimental Mechanical Engineering Design Bureau) representatives:

- participation in the assessment of the state of the reactor and its safety critical systems, in the development of measures to localize and eliminate accidents at the NPP;
- performance of works estimating the level of damage to the main process equipment;
- preparation of decisions on remediation of damage equipment;
- participation in preparation of proposals of expected releases during the expected accident development.

7.3.2.1.6. Removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8

7.3.2.5. Actions of Gosatomnadzor representatives

7.3.2.5.1. Organization of the work schedule and place of the regulator representatives (if additional representative of the regulator needs to be involved).

7.3.2.5.2. Supervising the following:

- timeliness and completeness of measures conducted to eliminate and mitigate the accident consequences;
- observance of rules and regulations in the field of atomic energy use during arrangement of activities related to bringing of the damaged NPP unit into a safe condition as well as to elimination of consequences;
- timely putting into effect and implementation of the Action Plan for personnel protection in case of an accident at nuclear power plant;
- credibility and timeliness of published and broadcasted information about the nature and consequences of the event.

7.3.2.5.3. Preparing and providing operative information to the OPAS group management and Rostekhnadzor management about the status of nuclear and radiation safety at the nuclear power plant, about comprehensiveness and adequacy of the measures taken to manage and mitigate the accident and about the results of supervision.

7.3.2.6. Actions of the Rosgidromet representatives

7.3.2.6.1. Establishment of communications with the territorial bodies in charge of hydrometeorology and environmental monitoring and research enterprises of Rosgidromet for the purpose of providing coordination of actions to verify radiation environment in the NPP region, radionuclide content of the contaminant and forecast trajectory of movement of air masses from the NPP region.

7.3.2.6.2. Preparation of the following materials for the OPAS group and Rosgidromet using information of Rosgidromet and Minatom of Russia units:

- levels of radioactive contamination of the natural environment in the territory of the region due to the NPP accident;
- forecast trajectories of air mass transfer from the NPP region;
- weather conditions and weather forecast in the NPP region.

7.3.2.7. Actions of representatives of the Nuclear Safety Institute, Russian Academy of Sciences

7.3.2.7.1. Establishment of reliable communication with the Nuclear Safety Institute Engineering support center for the purpose of communicating additional information about the accident and the resulted radiation environment, use of Engineering support center recommendations in the OPAS group operation.

7.3.2.7.2. Participation in the assessment of the radiation source and the radiation environment within the buffer area boundaries.

7.3.2.7.3. Participation in verification of the radiation contamination boundaries outside the buffer area and estimation of dose loads on the population.

7.3.2.7.4. Supply of practical help to optimize the radiation monitoring outside the buffer area.

7.3.2.7.5. Assessment and analysis of implemented and planned actions to protect the personnel and population.

7.3.2.7.6. Participation in preparation of information materials and recommendations for the population in the accident zone.

7.3.2.7.7. Preparation of a report for the OPAS management on assessment of received and expected dose loads on the population of nearby settlements and initial recommendations on the population radiation protection and damage minimization.

7.3.2.5. Removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8

7.3.2.5.1 - 7.3.2.5.7. Removed - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

7.3.2.6. Removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8

7.3.2.6.1 - 7.3.2.6.2. - Removed - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

7.3.2.7. Removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8

7.3.2.7.1 - 7.3.2.7.5. Removed - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

7.3.2.8. Removed - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8

7.3.2.8.1 - 7.3.2.8.2. Removed - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8.

8. PROPERTY, DOCUMENTATION AND REPORTS OF OPAS GROUP

8.1. OPAS GROUP PROPERTY

OPAS group property includes the property stored in the Rosenergoatom Emergency Response Center and the plant civil defense property stored in a special room on the territory of each power plant.

8.1.1. The list of OPAS group property stored in the Rosenergoatom ERC

The list of portable radiation survey and dosimetry monitoring equipment, means of decontamination and IPM, special clothes and property of the emergency assistance team is given in Appendix 3.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

8.1.2. Maintaining OPAS property in constant readiness for use in Emergency

Constant readiness of OPAS property for use in emergency is provided by Rosenergoatom by means of:

8.1.2.1. Creation of proper storage conditions:

- allocation of a compartment equipped with an alarm system;
- prohibition of unauthorized access to the OPAS group property;
- arrangement of storage racks;
- arrangement of general ventilation.

8.1.2.2. Prompt replacement of medical supplies with expired life.

8.1.2.3. Adherence to OPAS group property maintenance regulations in accordance with operation documentation requirements.

8.1.3. The list of NPP civil defense property for the OPAS group stored in a special room off-site the NPP

The list of NPP civil defense property for the OPAS group stored in a special room off-site the NPP is given in Appendix 4.

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

8.2. OPAS group documentation

The documentation of the OPAS group includes regulatory documentation stored in NPP ERC and PECC/NPP, operation documentation, special passes for OPAS group members for entering nuclear power plants and reports.

8.1.2. Regulatory documentation of the OPAS group

The list of design and regulatory documentation for the NPP OPAS group kept in the Rosenergoatom Emergency Response Center and at the protected emergency actions control post (in the NPP territory and in the town near the NPP) at every NPP is given in Appendix 5 (see below).

(as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

NPP is responsible for providing the complete set of this documentation to the Emergency Response Center and the protected emergency actions control post and timely update of this documentation.

A person responsible for completing a set of regulatory documentation for the NPP OPAS group that will be kept in the Rosenergoatom Emergency Response Center and at the protected emergency actions control post is assigned by the Director's order at every NPP.

8.2.2. Operation Documentation of the OPAS group

The OPAS group operation documentation contains the list of OPAS group members, procedures for alert and assemblage of the OPAS group members which makes it possible for Rosenergoatom to inform and bring together the OPAS group members as soon as possible. The operation documentation is stored in the Rosenergoatom ERC and is subject to immediate update in the case of any changes.

8.2.3. The OPAS group members' passes are issued by Rosenergoatom.

(Item 8.2.3 as revised by Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

8.2.4. Reports of the OPAS group

8.2.4.1. Completion of operations of the OPAS group at the affected NPP is documented by a report.

8.2.4.2. The OPAS group members prepare necessary technical reports for the OPAS group leader on the established dates.

8.2.4.3. All the OPAS group documentation is presented in a standard form, registered and sent for storage in the OPAS group archive.

9. LIST OF DOCUMENTS USED FOR DEVELOPMENT OF THIS PROVISION

1) Federal law "On the use of atomic energy" (approved by the State Duma in October 20, 1995).

2) Federal law "On radiation safety of population" (approved by the State Duma in December 05, 1995).

3) Federal law "On Protection of Population and Territories Against Natural and Man-induced Emergency" (approved by the State Duma in November 1, 1994).

4) Federal law "On Internal Troops of the Ministry of Internal Affairs of the Russian Federation" (approved by the State Duma in December 25, 1996).

5) Resolution of the USSR Council of Ministers "On measures to prevent nuclear power plants personnel and public in the case of occurrence of radiation hazardous accidents at these plants" (approved in October 23, 1989. No.882).

6) Provision on a Universal State System of emergency prevention and elimination (approved by Resolution of the Government of the Russian Federation No.1113 dated November 5 1995).

7) Rules for physical protection of nuclear materials, nuclear installations and nuclear material storage facilities (enacted by Decree of the Government of the Russian Federation No 264 of 07.03.1997).

8) Norms of radiation safety. NRB-76/87 (NRB-96).

9) General Provisions on Nuclear Power Plant Safety Assurance. OPB-88/97 PNAE G-01-011-97

10) "Standard Action Plan for Personnel Protection in Case of an Accident at Nuclear Power Plant" RD-EO-0030-94).

11) Sanitary Rules for Nuclear Plant Design and Operation SP-AS-88/93 (introduced to life by the Order of Minatom of Russia dated 1993 December 28, N.773).

12) Provision on Rosenergoatom Emergency Prevention and Response System (introduced to life by the Order of Rosenergoatom N.150 dated August 13, 1996).

13) Provision on the Rosenergoatom Emergency commission (approved by Rosenergoatom President on July 31.1996).

14) Rosenergoatom Emergency Response Center. General provisions (approved by Rosenergoatom President on July 8.1996).

15) Convention on Early Notification of a Nuclear Accident, Vienna 1986

16) Conventions on Assistance in the Case of Nuclear Accident or Radiological Emergency, Vienna 1986.

17) IAEA Safety Standards recommendations.

18) Preparedness of state authorities in case of accidents at nuclear power plants, No.50-SG-06, Vienna, 1982.

19) Preparedness of state authorities in case of accidents at nuclear power plants, No.50-SG-06, Vienna, 1982.

20) Planning for Off-site Response to Radiation Accidents in Nuclear Facilities, N.55, Vienna 1981.

21) Organization of nuclear power plant safe operation, No.50-SG-09, Vienna, 1986.

22) System of information on occurrences at nuclear power plants, Vienna 1990.

23) Provision on procedure of announcement of emergency, prompt information communication and arrangement for emergency assistance to NPPs in case of radiation-hazardous situations" Moscow 1992.

24) Provision for the procedure of Investigation and Accounting of Operational Occurrences at Nuclear Power Plants. (PNAE G-12-005-97).

CATEGORIES OF NPP OPERATIONAL OCCURRENCES

(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF
No.1 of 8/30/2002)

Conventional notation of accident category	Features and consequences of occurrences
A01	Release of radioactive substances to the environment due to a severe beyond design basis accident resulting in possible serious radiation exposure of NPP personnel (workers) and the public, damage to their health, contamination of vast territories by radiation substances. Transboundary transfer of radioactive substances is possible. Environment pollution is long term.
A02	Release of radioactive substances to the environment as a result of which the level "B" of criteria for urgent decision making at the beginning of an accident outside the NPP sanitary-protection zone is reached or exceeded: an expected exposure dose in the first 10 days is 500 mGy for the total body or 5,000 mGy for the thyroid body, lungs, skin.
A03	Release of radioactive substances to the environment as a result of which the level "A" of criteria for urgent decision making at the beginning of an accident outside the NPP sanitary-protection zone is reached or exceeded: an expected exposure dose in the first 10 days is 50 mGy for the total body or 500 mGy for the thyroid body, lungs, skin. Notes 1. Accidents of categories A01, A02, A03 are characterised by exceed of maximal design limit of nuclear fuel element damaging. 2. Levels "A" и "B" of criteria for making urgent decisions in the initial period of an accident are consistent with NRB-99
(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8)	
A04	Release of radioactive substances to the environment as a result of which the main exposure dose limit for the population of 1 mSv per year within the boundaries of the sanitary-protection zone is exceeded. One time external and/or internal exposure of

	<p>personnel the dose of which exceeds the potentially dangerous value (200 mSv). Damage to nuclear fuel elements, when their safe operation limit is exceeded in terms of number and significance of failures, while the maximum design limit is not exceeded.</p>
(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8)	
Events	
P01	<p>Penetration of radioactive substances to the personnel workplaces, the NPP site or to the environment due to failures of systems (elements), defects of operational procedures, erroneous personnel actions as a result of which contamination of personnel workplaces by beta-active nuclides reaches 10,000 particles/(min. x sq. cm) and/or by alpha-active nuclides - 200 particles/ min. x sq. cm); contamination of the sanitary-protection zone leads to creation of the exposure zone which does not exceed 1 mSv per year. One-time external and/or internal exposure of some persons from the personnel, dose of which exceeds the main dose limit, but is not potentially hazardous (200 mSv)</p>
(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8)	
P02	Violation of normal operation limits (except for radiation limits)
P03	Violation of safe operation conditions
P04	One or several safety critical system channels are unavailable which is detected during a routine testing or an inspection in the NPP unit operation
P05	Safety systems actuation caused by the need for performance of the safety function during the NPP unit operation which is accompanied by failures, besides those expected in the design basis accidents, of safety system elements beyond a single failure and/or by spurious actions of the personnel
P06	Safety systems actuation caused by the need for performance of the safety function during the NPP unit operation which is not accompanied by failures besides those expected in the design basis accidents, of safety system elements beyond a single failure and/or by spurious actions of the personnel
P07	Actuation of a safety system or a safety channel not connected with the performance of a safety function, including the part of the firefighting system that provides for functioning of the safety systems
P08	Shutdown of the reactor installation or power outage without actuation of the NPP operation emergency protection system, caused by the system (elements) failure and/or by spurious actions of the personnel or by external factors
P09	NPP unit load decrease of 25% and over of the immediately preceding level of power caused by failure of systems (elements), and/or by spurious actions of the personnel,

	factors (except for events specified in item 2.2 of Provision for the procedure of investigation and accounting of NPP operational occurrence (PNAE G-12-005-97))
P10	Drop of and/or damage to a fuel assembly, fuel element during fresh or spent fuel management, caused by failure of systems (elements) (including failure of NPP cargo lifting equipment, used during nuclear fuel handling) and/or by spurious actions of personnel
P11	Damage or defects of NPP elements of the 1st and the 2nd classes of safety occurred or revealed in the NPP unit operation that did not however result in the initiating event

GENERAL FLOW CHART OF EMERGENCY COMMUNICATION WITH
ORGANIZATIONS, WHOSE REPRESENTATIVES ARE OPAS GROUP MEMBERS
IN THE CASE OF AN ACCIDENT AT NPP WITH LWGR, FAST REACTOR,
GRAPHITE STEAM POWER REACTOR

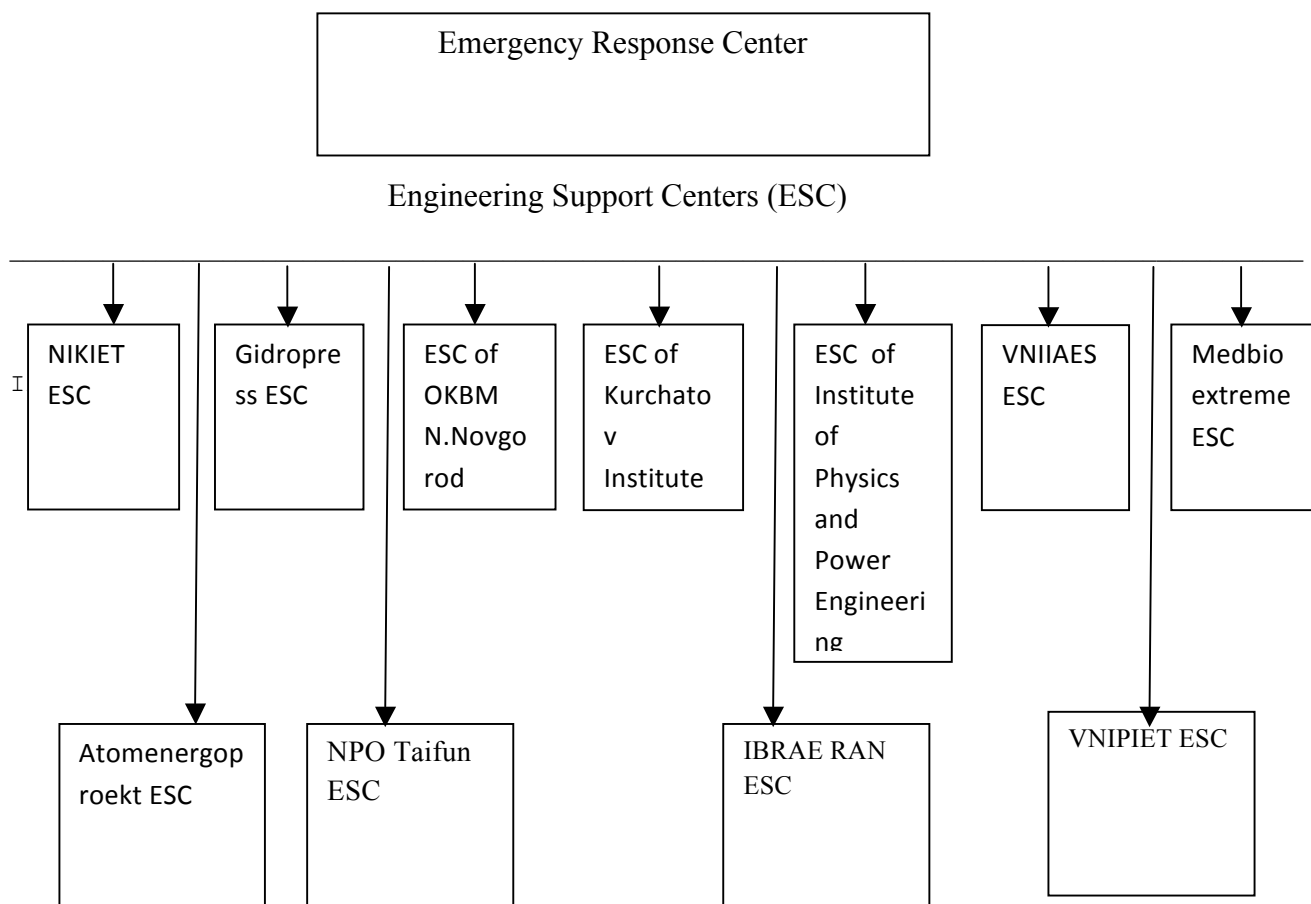
Removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF
of 30.08.2002 No.8

GENERAL FLOW CHART OF EMERGENCY COMMUNICATION WITH
ORGANIZATIONS, WHOSE REPRESENTATIVES ARE OPAS GROUP MEMBERS
IN THE CASE OF AN ACCIDENT AT NPP WITH WWER TYPE REACTOR

Removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF
of 30.08.2002 No.8

FLOW CHART OF EMERGENCY COMMUNICATION WITH AND INTRODUCTION OF THE ENGINEERING SUPPORT CENTERS OF ROSENERGOATOM CRICIS CENTER AND OPAS GROUP IN THE CASE OF AN ACCIDENT OR RADIATION HAZARDS

(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF No.1 of 8/30/2002)



LIST OF PORTABLE EQUIPMENT OF RADIATION SURVEY AND DOSIMETRY
MONITORING, DECONTAMINATION AND IPM EQUIPMENT, SPECIAL
CLOTHES AND PROPERTY OF OPAS GROUP

(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF
No.1 of 8/30/2002)

N of item	Description	Unit of measurement	Required quantity	Notes
	Individual protection means			
1	Respirator of ShB-1 type "Lepestok-200"	piece	1,000	
2	Respirator of type "Lepestok Apan" ("RM-2", "RU-92CH")	piece	1,000	
3	Filtering type breathing mask GP-7	piece	60	
4	Protective cask "Trud"	piece	60	
5	Special resin gloves	pair	1,000	
6	Cotton gloves (inserts)	pair	1,000	
7	Plastic protective clothes (jump suits, oversleeves, overshoes)	set	100	
8	Basic special clothes (working dress, suit warehouse coat, cap)	set	100	
9	Special footwear (boots with lavsan top, rubber boots)	set	100	
10	Protective closed- type spectacles	set	100	
11	Winter warm clothes and footwear	set	100	
12	Filtering box to capture iodine	set	100	
	Radiation reconnaissance and dosimetric control means			
1	Dosimeter DRG-01T1	piece	40	

2	Individual dosimeter (complete with DP-22V) DKP-50	piece	50	
	Decontamination and personal hygiene means			
1	Medicine for cleaning skin surfaces of radioactive contaminants "Zaschita	kg	20	
2	Individual medical kit AI-2	piece	60	
(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8)				
3	Individual medical-radiation protection kit AP	piece	60	
(item 3 is added by Amendemnt No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)				
4	First aid individual dressing package PPI	piece	60	
5	Skin decontamination kit IPP-10	piece	60	
6	Potassium iodide pills	package	10	
7	Toilet soap	piece	60	
8	Towel	piece	10	

Note: The specified OPAS group property and equipment is stored in a special room at Rosenergoatom of Minatom of Russia (the property and the equipment for every member of the central OPAS group is defined and packed in a special box).

LIST OF
CIVIL DEFENSE PROPERTY OF OPAS GROUP STORED
IN A SPECIAL ROOM OUTSIDE THE NPP TERRITORY

(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF
No.1 of 8/30/2002)

N of item	Description	Unit of measurement	Required quantity	Notes
1	Winter man suit "Taiga"	set	60	
2	Warm shoes	pair	60	
3	Jacket with warm lining	piece	60	
4	Valenki	pair	60	
5	Rubber boots	pair	60	
6	Battery powered lamp	piece	20	
Individual protection means				
1	Respirator of type ShB-1 "Lepestok-200"	piece	200	
2	Respirator of type "Lepestok-Apan" ("RM-2", "RU-92CH")	piece	200	
3	Filtering type breathing mask GP-7	piece	60	
4	Protective cask "Trud	piece	60	
5	Special resin gloves	pair	200	
6	Cotton gloves (inserts)	pair	200	
7	Plastic protective clothes (jump suits, oversleeves, overshoes)	set	100	
8	Protective closed-type spectacles	piece	100	
9	Special clothes (working dress or suit)	piece	60	
10	Special footwear (boots with lavsan top)	pair	60	

Decontamination and personal hygiene means				
1	Medicine for cleaning skin surfaces of radioactive contaminants "Zaschita"	kg	20	
2	Individual medical kit AI-2	piece	60	
(as revised by Amendment No.1 approved by <u>Resolution</u> of Gosatomnadzor of RF of 30.08.2002 No.8)				
3	Individual medical radiation protection kit AP	piece	60	
(item 3 is added by Amendemnt No.1 approved by <u>Resolution</u> of Gosatomnadzor of RF of 30.08.2002 No.8)				
4	First aid individual dressing package PPI	piece	60	
5	Skin decontamination kit IPP-10	piece	60	
6	Potassium iodide pills	package	10	
7	Toilet soap	piece	60	
8	Towel	piece	60	
9	Plastic sack with label for OPAS group members clothes	piece	60	
Dosimetric reconnaissance and control equipment				
1	Radiometer DP-5V (IMD-1p)	piece	15	
2	Radiometer DRG-01T	piece	15	
3	Dosimeter DKS-04	piece	5	
4	Contamination control device UIMCh-2	piece	5	

Consultant Plus: Note: Numbers of paragraphs correspond to the text of the document				
6	Dosimeter KID-6 with a measurement panel	piece	60	
7	Radiometer "Tsna"	piece	15	
8	Device for definition of radioactive iodine in the air	piece	2	
9	Dose rate meter IMD-21B	piece	2	
Communication means				
1	Portable radio station (of type Motorola, RS, FM etc.) for working within 5-km zone around NPP (radio net No.1)	piece	10	
2	Mobile radio station 2 RS-210/M etc.) for working in 30-km zone around NPP(radio net No.2)		2	

Note. It is allowed to substitute the dosimetry monitoring and survey equipment with other devices provided that they have metrological properties similar to those of the equipment listed in the Appendix.

(the note is added by Amendemnt No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

Appendix 5

LIST OF
DESIGN AND REGULATORY DOCUMENTATION FOR
NPP OPAS GROUP KEPT IN THE ROSENERGOATOM EMERGENCY RESPONSE
CENTER
AND PECC (IN THE NPP TERRITORY
AND IN THE NPP TOWN) AT EVERY NPP

(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF
No.1 of 8/30/2002)

1. Provision on procedure of announcement of emergency, prompt information communication and arrangement for emergency assistance to NPPs in case of radiation-hazardous situations.

2. Plans:

2.1. Action plan for personnel protection in case of accident at NPP.

2.2. Firefighting plan at NPP.

3. Radiation monitoring diagram for NPP, buffer area, town near NPP and radiation control area of NPP.

4. Design-technical documentation of NPP.

4.1. General plan of the NPP site.

4.2. NPP approach plan.

4.3. Plans of marks and sections of the NPP main building.

5. List of operation-technical documentation.

5.1. NPP with WWER-440 and 1,000 (for each unit).

No.	Type of document	Ownership	Document title
1.	Flow-sheet	Reactor hall	
1.1.	- " -	- " -	Flowsheet of the primary system including make-up-blowdown, emergency and normal cooling down, biological treatment, AWT-1, AWT-2
1.2.	- " -	- " -	Emergency feed water layout
1.3.	- " -	- " -	Emergency boration layout
1.4.	- " -	- " -	CECCS, CCS, hydro tanks layouts
1.5.	- " -	- " -	Accident localization layout
1.6.	- " -	- " -	Service water supply system layout
1.7.	- " -	- " -	Spent fuel pool and reloading layout
1.8.	- " -	- " -	RW storage facility layout PAO
1.9.	- " -	- " -	Drawings (general layout) of RI and process video frame equipment
1.10.	- " -	- " -	General arrangement drawing (general view)

			of RI
1.11.	- " -	- " -	Protections and interlocks of main equipment Settings sheets
2.	Technical layout	Turbine compartment	
2.1.	- " -	- " -	Main steam pipe arrangement including BRU-A, BRU-K, BRU-D, BRU-SN
2.2.	- " -	- " -	Feed water arrangement including deaerators, their piping and valving
2.3.	- " -	- " -	Main condensate arrangement
2.4.	- " -	- " -	Secondary circuit cooldown layout
2.5.	- " -	- " -	Steam generators, emergency supply configuration
2.6.	- " -	- " -	Steam generator blow down layout
2.7.	- " -	- " -	Tank equipment arrangement
3.	Flow sheet	Electrical shop	
3.1	- " -	- " -	Main electrical connections circuit
3.2.	- " -	- " -	Auxiliary electrical connection circuit of 6 kV
3.3.	- " -	- " -	Reliable auxiliary power supply circuit of 6 kV and 0,4 kV
3.4.	- " -	- " -	Diesel generator station layout
3.5.	- " -	- " -	Emergency automatic equipment layout
4.	Instruction	NPP power unit	

4.1.	- " -	- " -	Process Regulations on the power unit operation
4.2.	- " -	- " -	Reactor unit operating manual
4.3.	- " -	- " -	Instruction on elimination of Emergency and accidents at the power unit
4.4.	- " -	- " -	Reactor unit safety critical system operating instruction
4.5.	- " -	- " -	Accident elimination instruction for the NPP electrical part
4.6.	- " -	- " -	Beyond-design-basis accident control manual

5.2. NPP with LWGR-1000 reactor type (for each unit).

N п/п	Type of document	Ownership	Document title
1	Flow sheet	Reactor hall	
1.1	- " -	- " -	Forced circulation coolant circuit flowsheet
1.2	- " -	- " -	ALS, CCS, ECCS, blowdown and cooling system layouts
1.3	- " -	- " -	Feed water layout
1.4	- " -	- " -	Component cooling circuit
1.5	- " -	- " -	Gas circuit
1.6	- " -	- " -	Layout UPAK
1.7	- " -	- " -	CPS cooling circuit
1.8	- " -	- " -	Drawings (general view)of RI and process channel equipment

1.9	- " -	- " -	General arrangement drawing (general view) of RI
1.10	- " -	- " -	Protections and interlocks of main equipment Settings map
2	Flow sheet	Turbine hall	
2.1	- " -	- " -	Arrangement of main stream piping and auxiliary piping
2.2.	- " -	- " -	Main condensate arrangement
2.3	- " -	- " -	Emergency steam discharge arrangement
3	Flow sheet	Chemical shop	
3.1	- " -	- " -	Active water treatment layouts
3.2	- " -	- " -	Tank equipment arrangement
3.3	- " -	- " -	RW storage facility layout
3.4	- " -	- " -	Condensate cleaning layout
4	Flow sheet	Electrical shop	
4.1	- " -	- " -	Main electrical connections circuit
4.2	- " -	- " -	Auxiliary electrical connection circuit of 6 kV
4.3	- " -	- " -	Reliable auxiliary power supply circuit of 6 kV and 0,4 kV
4.4	- " -	- " -	Layouts of diesel generator units
4.5	- " -	- " -	Emergency automatic equipment arrangement
5	Instruction	NPP power unit	

5.1	- " -	- " -	Process Regulations on the power unit operation
5.2	- " -	- " -	Operating instruction for RI, forced circulation coolant circuit and CPS cooling circuit
5.3			Instruction on elimination of Emergency and accidents at the power unit
5.4	- " -	- " -	Operating instruction on safety critical systems (ECCS, CCS, ALS)
5.5	- " -	- " -	Accident elimination instruction for the NPP electrical part
5.6	- " -	- " -	Beyond-design-basis accident control manual

5.3. The Bilibino NPP with a graphite steam power reactor type EGP-6

N п/п	Type of document	Ownership	Document title
1.	Flow sheet	Reactor hall	
1.1.	- " -	- " -	Thermal unit scheme
1.2.	- " -	- " -	Emergency feed water system arrangement
1.3.	- " -	- " -	Active water treatment, RW repository layout
1.4.	- " -	- " -	Emergency make-up system of the cooling water
1.5.	- " -	- " -	Emergency cooldown layout

1.6.	- " -	- " -	Drawings (general layout) of reactor installation and process video frame equipment
1.7.	- " -	- " -	General arrangement drawing (general view) of RI
1.8.	- " -	- " -	Protections and interlocks of main equipment setting cards
2.	Flow sheet	Turbine hall	
2.1.	- " -	- " -	Steam piping arrangement
2.2.	- " -	- " -	Main condensate system arrangement
2.3.	- " -	- " -	Emergency steam receipt arrangement
3.	Flow sheet	General plant layout	
3.1	- " -	- " -	Main electrical connections circuit
3.2.	- " -	- " -	Electrical connections circuit of 6 kV
3.3.	- " -	- " -	Auxiliary power supply circuit of 6 kV and 0,4 kV
3.4.	- " -	- " -	Reliable auxiliary power supply circuit of the 1 st and the 2 nd category
3.5.	- " -	- " -	Diesel generator station layout
3.6.	- " -	- " -	Emergency automatics arrangement
4.	Instruction	NPP power unit	

4.1.	- " -	- " -	Process regulations of the NPP
4.2.	- " -	- " -	Operating instruction of graphite steam power reactor EGP-6
4.3.	- " -	- " -	Instruction on prevention and elimination of violations at the Units of the Bilibino NPP
4.4.	- " -	- " -	Instruction for operating EGP-6 at overloads of fuel assembly, CPS channels
4.5.	- " -	- " -	Operating instruction of RI safety critical systems
4.6.	- " -	- " -	Accident elimination instruction for the NPP electrical part
4.7.	- " -	- " -	Beyond-design-basis accident control manual

5.4. The Beloyarsk NPP with reactor BN-600

No.of item	Type of document	Ownership	Document title
1.	Flow sheet	Reactor hall	
1.1.	- " -	- " -	Flow sheets of the 1 st , 2 nd , 3 rd circuits
1.2.	- " -	- " -	Feed water supply arrangement of the power unit
1.3.	- " -	- " -	Power unit main steam layout
1.4.	- " -	- " -	RW storage facility layout
1.5.	- " -	- " -	Drawings (general layout) of

			reactor installation and process video frame equipment
1.6.	- " -	- " -	General arrangement drawing (general view) of RI
1.7.	- " -	- " -	Protections and interlocks of main equipment setting cards
2.	Flow sheet	Turbine hall	
2.1.	- " -	- " -	Main condensate arrangement
2.2.	- " -	- " -	Live steam pipelines arrangement
2.3.	- " -	- " -	Deoxidization scheme of the secondary circuit coolant
3.	Flow sheet	General plant layout	
3.1.	- " -	- " -	Main electrical connections circuit
3.2.	- " -	- " -	Auxiliary electrical connection circuit of 6 kV
3.3.	- " -	- " -	Reliable auxiliary power supply circuits of 6 kV and 0,4 kV
3.4.	- " -	- " -	Diesel generator station layout
3.5.	- " -	- " -	Emergency automatic equipment
4.	Instruction	NPP power unit	
4.1.	- " -	- " -	Operational regulations of Power Unit No.3 of the Beloyarsk NPP
4.2.	- " -	- " -	Technical specifications of RI BN-600
4.3.	- " -	- " -	Operating manual of RI
4.4.	- " -	- " -	Operating instruction of RI safety

			critical systems
4.5.	- " -	- " -	Instruction on prevention and elimination of accidents at RI
4.6.	- " -	- " -	Accident elimination instruction for the NPP electrical part
4.7.	- " -	- " -	Beyond-design-basis accident control manual

Appendix 6

LIST OF
COMMUNICATION FACILITIES NECESSARY FOR OPAS GROUP OPERATION

(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF
No.1 of 8/30/2002)

1. Mobile communications center mounted on a chassis of a cross-country vehicle - 1
2. Radio station of special mobile communication system "Rosa" - 1
(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF
No.1 of 8/30/2002)
3. Mobile device of satellite - 4 communication network "Immarsat Mini-M" and
"Globalstar-4"
(item 3 as amended by Amendment No.1 approved by Resolution of Gosatomnadzor of
RF No.1 of 8/30/2002)
4. Portable radio station for communications within the 5-km zone around the NPP. - 10

(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF No.1 of 8/30/2002)

5. Removed - Amendment No.1 approved by Resolution of Gosatomnadzor of RF of 30.08.2002 No.8

5. Personal radio signal receiver of "Pager" type - 60

6. Hardware system for computer-aided annunciation - 1

7. Sound recording facility - 1

8. Sound-and-light installation for operational vehicle - 3

(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF No.1 of 8/30/2002)

10. Removed. - Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

9. Portable Dictaphone - 3

(as revised by Amendment No.1 approved by Resolution of Gosatomnadzor of RF No.1 of 8/30/2002)

10. Cell radio phone - 10

11. Home phone sets of the Moscow network - For all members of OPAS group

12. Portable copying machine - 2

13. Telephone set for OPAS group meeting room - 5

14. Portable fax machine - 2

17. Removed - Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

18. Removed - Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

19. Removed. - Amendment No.1 approved by Resolution No.8 of Gosatomnadzor of RF dated 30.08.2002)

15. Portable hardware set for video conference calls - 2

(item 15 is added by Amendemnt No.1 approved by Resolution of Gosatomnadzor RF dated 30.08.2002 No.8)

FORM OF REPORTING OCCURRENCES AT NPP

Removed. - Amendment No.1 approved by Resolution of Gosatomnadzor of RF
dated 30.08.2002 No.8