## NON-TECHNICAL SUMMARY

Implementation of complex (consolidated) Seffety Ungrade Program of Power Units of Nuclear Power Plants,

GCSUP Environmental aine Social Action: Planâno
cCSUp stakeholder Engagementrpañ (2) cove


Kyiv-2021


## Introduction

SE NNEGC "Energoatom" implements the Complex (Consolidated) Safety Upgrade Program of Power Units of Nuclear Power Plants (CCSUP) (CMU Ordinance No1270 on 07.12.2011) with the purpose of further steady improvement of nuclear safety, ensuring efficient and reliable performance in the energy branch, bringing safety of Ukrainian nuclear power plants to the level that meets international requirements to nuclear safety and environmental protection. CCSUP consolidated measures, their lists per type of power units and cards for each CCSUP measure were published in the original language on official NNEGC "Energoatom" web-site. Due to the full-scale war against Ukraine, launched by the Russian Federation on February 24, 2022, the website was temporarily suspended. In May 2022 its operation was restored at the link: https://www.energoatom.com.ual
The costs for the CCSUP implementation are financed through SE "NNEGC "Energoatom" own funds and the loans provided by the European Bank for Reconstruction and Development (EBRD) and Euratom with total amount 600 mil. Euros. EBRD and Euratom conclude the loan agreements with SE NNEGC "Energoatom" of 25.03 .2013 and 07.08.2013 correspondingly. Guarantee agreements between Ukraine and Lenders were ratified by Lows of Ukraine No1267-VII and No1268-VII of 15.05.2014. The loan agreements with EBRD and Euratom come into effect of 19.12 .2014 p . and 27.05.2015 correspondingly.
Because of recent years economic questions in Ukraine and significant delay with the loan effectiveness, CCSUP implementation term was prolonged initially in 2015 till 2020 (by the resolution of CM of Ukraine No. 776 of 30.09.2015), then in 2019 - till the end of 2023 (by the resolution of CM of Ukraine No. 390 of 08.05.2019).

As to the projects financed from the EBRD loan, the Bank establishes specific Performance Requirements (PR) to key aspects of environmental and social issues and impacts. If, as in the case of the CCSUP, the envisaged activity relates to the existing facilities or sites, then the Borrower is obliged to adopt and implement an Environmental and Social Action Plan (ESAP) and to develop, release and implement a Stakeholder Engagement Plan (SEP) within the period of the project implementation. CCSUP ESAP and CCSUP SEP were published on official NNEGC "Energoatom" site.
The reports developed by CCSUP Project Management Unit (PMU) supported by PMU consultant (AJC Developpement, France) are presented in this NonTechnical Summary. The reports devoted to implementation status and results (as of 30.09.2022):

- Complex (Consolidated) Safety Upgrade Program of Power Units;
- Environmental and Social Action Plan of CCSUP;
- Stakeholder Engagement Plan of CCSUP.

Due to the war against Ukraine, launched by the Russian Federation, the implementation of most of the CCSUP measures planned for 2022, as well as the further implementation of some measures of the CCSUP ESAP and the CCSUP SEP, have been postponed to later years.

## 

## IMPLEMENTATION OF COMPLEX (Consolidated) SAFETY UPGRADE PROGRAM OF POWER UNITS

 OF NUCLEAR POWER PLANTS(as of 30.09.2022)

## Nuclear Power Industry of Ukraine

State Enterprise "National Nuclear Energy Generating
Company "Energoatom" was established on October, 17, 1996.
The Company is the operator of four functioning NPPs, the total installed capacity is 13835 MW


Zaporizhzhya NPP* 6 units VVER-1000/320 *currently temporary occupied by the Russian Federation


Khmelnytska NPP 2 units VVER-1000/320


South-Ukraine NPP
1 unit VVER-1000/302
1 unit VVER-1000/338 1 unit VVER-1000/320

SE NNEGC "Energoatom" provides more than 50\% of Ukraine's demand for electric energy

The Company is a member of WANO, WNA, EUR, INPRO


## VVER Reactor Safety - Design Basis



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EHEPROATOM
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## Safety Level of Ukrainian NPPs

The safety level is positively assessed by international experts in the latest years:
$\checkmark$ At regular IAEA meeting regarding compliance with the Nuclear Safety Convention provisions
$\checkmark$ While permanent monitoring by international experts in frames of international cooperation, including that with WANO

## Principal Safety Upgrade Programs of Power Units of Ukrainian NPPs



## CCSUP Implementation Objectives

- Safety level upgrade for all power units of Ukraine to the level compliant to modern national safety standards
- Implement IAEA recommendations on safety upgrade of Ukrainian NPP
- Fulfill the existing obligations to the international financial institutions regarding implementation of safety upgrade measures
- Replace the safety important equipment, the service life whereof is expired, with a modern one
- Implement corrective measures for preventing accidents similar to the "Fukushima-1" accident


## Scope and Implementation Status of CCSUP Measures

CCSUP contains consolidated measures for 3 types of power units, all-plant measures and the measures of the Company:

| VVER-1000/V-320 | (11 power units) | $-88-91$ measures at each unit; |
| :--- | :--- | :--- |
| VVER-1000/V-302,338 | (2 power units) | $-69,70$ measures at each unit; |
| VVER-440/V-213 | (2 power units) | $-68-69$ measures at each unit; |
| All-plant | (4 sites) | $-6-8$ measures at each site; |
| NNEGC "Energoatom" | -8 measures |  |
| Total (including the "additional" ones) | $\mathbf{- 1 2 9 5 ( 2 1 3 )}$ measures |  |
| Completed, of them (as of 30.09 .2022$)$ | $-1083(139)$ measures |  |

CCSUP measure implementation terms at specific units were set with consideration of:
$>$ safety impact level;
$>$ expiry of the lifetime envisaged by the reference design;
$>$ service life expiry of specific equipment.

## (4) EHEPRPOATOM

| INITIALLY PLANNED MEASURES | Unit | Total Number of Measures | Completed | To Implement |
| :---: | :---: | :---: | :---: | :---: |
| SS ZNPP | ZNPP-1 | 77 | 70 | 7 |
|  | ZNPP-2 | 77 | 70 | 7 |
|  | ZNPP-3 | 76 | 66 | 10 |
|  | ZNPP-4 | 76 | 69 | 7 |
|  | ZNPP-5 | 76 | 67 | 9 |
|  | ZNPP-6 | 77 | 45 | 32 |
|  | Common | 3 | 2 | 1 |
|  | Totally | 462 | 389 | 73 |
| SS RNPP | RNPP-1 | 54 | 47 | 7 |
|  | RNPP-2 | 53 | 46 | 7 |
|  | RNPP-3 | 79 | 76 | 3 |
|  | RNPP-4 | 79 | 72 | 7 |
|  | Common | 5 | 5 | 0 |
|  | Totally | 270 | 246 | 24 |
| SS KhNPP | KhNPP-1 | 79 | 75 | 4 |
|  | KhNPP-2 | 79 | 71 | 8 |
|  | Common | 4 | 3 | 1 |
|  | Totally | 162 | 149 | 13 |
| SS SUNPP | SUNPP-1 | 53 | 50 | 3 |
|  | SUNPP-2 | 53 | 47 | 6 |
|  | SUNPP-3 | 77 | 58 | 19 |
|  | Common | 5 | 5 | 0 |
|  | Totally | 188 | 160 | 28 |
| TOTAL |  | 1082 | 944 | 138 |


| ADDITIONAL MEASURES («post-Fukusima») | Unit | Total Number of Measures | Completed | To Implement |
| :---: | :---: | :---: | :---: | :---: |
| SS ZNPP | ZNPP-1 | 12 | 9 | 3 |
|  | ZNPP-2 | 12 | 9 | 3 |
|  | ZNPP-3 | 12 | 8 | 4 |
|  | ZNPP-4 | 12 | 8 | 4 |
|  | ZNPP-5 | 12 | 7 | 5 |
|  | ZNPP-6 | 12 | 5 | 7 |
|  | Common | 3 | 2 | 1 |
|  | Totally | 75 | 48 | 27 |
| SS RNPP | RNPP-1 | 15 | 10 | 5 |
|  | RNPP-2 | 15 | 10 | 5 |
|  | RNPP-3 | 12 | 10 | 2 |
|  | RNPP-4 | 12 | 8 | 4 |
|  | Common | 3 | 2 | 1 |
|  | Totally | 57 | 40 | 17 |
| SS KhNPP | KhNPP-1 | 12 | 10 | 2 |
|  | KhNPP-2 | 12 | 8 | 4 |
|  | Common | 2 | 1 | 1 |
|  | Totally | 26 | 19 | 7 |
| SS SUNPP | SUNPP-1 | 16 | 12 | 4 |
|  | SUNPP-2 | 17 | 12 | 5 |
|  | SUNPP-3 | 12 | 6 | 6 |
|  | Common | 2 | 1 | 1 |
|  | Totally | 47 | 31 | 16 |
| Company |  | 8 | 1 | 7 |

Examples of Measures Implemented at ZNPP: installs the fire retarding valve on air lines


EHEPRO


## Examples of Measures Implemented at ZNPP:

 reconstruction of automated radiation monitoring system

## Examples of Measures Implemented at RNPP:

modernise automatic chemical control systems


## Examples of Measures Implemented at RNPP:

equip with gas fire extinguishing devices

(․) 텁툥ATOM

## Examples of Measures Implemented at RNPP:

 install software-hardware complex of control safety systems

## Examples of Measures Implemented at RNPP:

 mobile diesel generator

## Examples of Measures Implemented at KhNPP

 Mobile pump for PG make-up
(9) EHEPROATOM

## Examples of Measures Implemented at KhNPP

 replace information computer systems (ICS)


## Examples of Measures Implemented at KhNPP

## implement diagnostic-system



# Examples of Measures Implemented at KhNPP 

implement automatic fire extinguishing system



## Examples of Measures Implemented at SUNPP

 passive hydrogen recombiners

Examples of Measures Implemented at SUNPP replace neutron flux and in-core-monitoring systems

(3) EADEPRATOM

## Examples of Measures Implemented at SUNPP



# Examples of Measures Implemented at SUNPP 

 "post-Fukushima" measures

Arrange steam generator, cooling pool, suppression chamber make-up during long-term complete blackout



## Measures Implementation Results

RNPP-1: core damage frequency (CDF)


## Measures Implementation Results SUNPP-1: core damage frequency (CDF)



## EHEPROATOM

## Measures Implementation Results

2022: core damage frequency (CDF)


## Measures Implementation Results 2022: Large Early Release Frequency (LERF)



## EHEPROATOM

## Measures Implementation Results

 Number of abnormalities in NPP operation

## ) EHEPROATOM

## Measures Implementation Results Fire and radiation safety level during 2022


were not exceeded:


- Reference levels of NPP releases and discharges
- Basic limit of NPP personnel exposure

daily average NPP radioactive releases were $<1 \%$ of the acceptable ones


## EHEPROATOM

## The influence of martial law on activity of SE "NNEGC "Energoatom"

In the course of the full-scale war against Ukraine, launched by the Russian Federation on February 24, 2022, the russian military invaded the ZNPP site, there was an external threat to the lives of personnel, significant damage was caused to ZNPP equipment, buildings, structures, pipelines, and structures, which led to the emergence of a nuclear and radiation hazard and the high threat of a nuclear accident.

With an armed attack on a nuclear facility, the Russian Federation violated almost all agreements within the framework of the UN, IAEA and other international institutions. In particular, the IAEA Statute, the Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management, the Convention on Notification of a Nuclear Accident, the Convention on the Physical Protection of Nuclear Installations and Nuclear Material.

Force majeure circumstances and significant damage to industrial facilities and the country's infrastructure made it impossible to timely complete one of the Company's priority tasks - the Complex (consolidated) Safety Upgrade Program of Power Units of Nuclear Power Plants in Ukraine. Therefore, the implementation of most its measures planned on 2022 is postponed to the following years.


## IMPLEMENTATION OF CCSUP ENVIRONMENTAL AND SOCIAL ACTION PLAN



## Ground for ESAP Development and Implementation

$\checkmark$ Memorandum of Understanding between European Union and Ukraine signed on the 29.11.2005
$\checkmark$ Environmental and Social Policy, EBRD, 2008
$\checkmark$ Complex (Consolidated) Safety Upgrade Program of Power Units of Nuclear Power Plants (CCSUP), approved by CMU Ordinance No 1270 of 07.12.2011
$\checkmark$ Loan Agreement (Ukraine: Complex (Consolidated) Safety Upgrade Program of Power Units of Nuclear Power Plants) between SE NNEGC "Energoatom" and EBRD of 25.03.2013
$\checkmark$ Loan Facility Agreement relating to the Complex (Consolidated) Safety Upgrade Program of Power Units of Nuclear Power Plants between SE NNEGC "Energoatom" and Euratom of 07.08.2013
$\checkmark$ Guarantee Agreement between Ukraine and EBRD, ratified by the Law of Ukraine No 1267-VII of 15.05.2014
$\checkmark$ Guarantee Agreement between Ukraine and Euratom, ratified by the Law of Ukraine No 1268-VII of 15.05.2014

## Environmental and Social Action Plan <br> (valid version non-objected by EBRD of 09.04.2015)

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## ESAP Requirements and Actions

cover entire Company and its Separate Subdivisions activities on environmental and social issues and impacts

(A) EHEPROATOM

ESAP Actions Implementation State

| Action group | $\begin{aligned} & \text { O } \\ & \stackrel{N}{N} \\ & \underset{\sim}{\sim} \end{aligned}$ | Fulfilled constantly or been continued | Realization term not come |  |
| :---: | :---: | :---: | :---: | :---: |
| Environmental, Health and Safety Management | 31 | 14 | 0 | 2 |
| Actions at NPP | 9 | 7 | 0 | 1 |
| Other actions | 5 | 6 | 0 | 0 |
| TOTAL | 45 | 27 | 0 | 3 |

[^1]
## Examples of Implemented ESAP Actions

Updated Statements on SE "NNEGC "Energoatom" Politics


## Examples of Implemented ESAP Actions

## Updated SS NPPs Official Web-Sites



# Examples of Implemented ESAP Actions 

## Updated SS NPPs Official Web-Sites




Director General of SUNPP Ihor Polovych is reporting on the situation at the nuclear power plant as of July 1, 2022

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The Husev family.
Fleeing from war
As of 8 a.m. on June
30, 2022, power units
of South Ukraine NPP
are operating in
normal mode
Dmytro Shamis: "War does not relax rules"

Support front at
SUNPP
of the South» charity fund was held today

On July 11, 2022 a joint action of the "Guardian of the South charity fund, the trade union committee of SUNPP and the
employees of SUNPP - participants of the action "Assistance to the defenders of Ukraine" took place.

## a) Heproatom

Examples of Implemented ESAP Actions SE NNEGC "Energoatom" Management System Certification for International Standards ISO-14001, OHSAS-18001


## Examples of Implemented ESAP Actions

Ukraine Joining to the International Information Exchange System EURDEP


## E) 래랑ATOM

## Some Results of ESAP Implementation

Development of reporting and normative documents


## Some Results of ESAP Implementation

Development of Management Report-2021

> 3BIT ПPO УПРАВЛІННЯ

3MICT $\qquad$




 EPPBHLLTBOZД HAEK EHE СИсТЕМА уПРАЕЛННЯ НЛТРРННИ КОНТРОПЬТА АУДИT. комㄱАен--По моппвепБна дяІІьність результатидаяльнос

 ОНАНСово-ЕКОНомІЧА ДІІЛЬНІСТВ КОНОМЧЧА РЕУУЛЬТАТВНІСТЬ ТА ФННННСОВИИ СТАН релізМЦด Нвестицйнихпроекті дослидженнята інноваці.

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## ESAP realization during 2022

## Actions on environmental, health and safety management

RP - was realized in the past, before the start of the reporting year;
RC - realization was continued during the reporting year and will be continued further; RF - realization was finished during the current year
RN - realization is planned for the next reporting year;

| No | ESAP, par | Action/ Indicator name | Realization status | Comment |
| :---: | :---: | :---: | :---: | :---: |
| 1 | 1.1 | Availability of ESAP, agreed with EBRD | RP | The valid ESAP version non-objected by EBRD of 09.04 .2015 is included to PIP and was published at SE NNEGC "Energoatom" site. |
| $\overline{2}$ | 1.1 | Annual reporting on ESAP implementation | RP | ESM Report: 2013-2014 was sent to EBRD 27.02.2015. ESM Report: 2015, 2016, 2017, 2018, 2019, 2020 were sent to Lenders $01.03 .2016,07.03 .2017,28.02 .2018,04.03 .2019,28.02 .2020$ and 16.03 .2021 correspondingly. The summary of ESAP implementation for 2021 was included in the Borrower's Quarterly Report for the 4th quarter of 2021. |
| 3 | 1.1 | Implementation of EA every 5 years | RP | The first EA Report was published 31.01.2012. The next EA Report including of PC reporting materials was published and sent for the State ecological expertize on 10.07.2017. The expertize was stopped and canceled by Minpryrody, because the legislative basis - the Law of Ukraine "On ecology expertize" has lost of force. The next OP is suspended until the end of hostilities on the territory of Ukraine. |
| 4 | 1.1 | Ecological Audits every 3 years | RP,RC | For the first time independent external audit was carried out in 2015, the results were sent to Lenders 31.07.2015. The next audit was carried out in 2018, the results were sent to Lenders 21.06.2018 and 16.07.2018. According to the it.1.1 of ESAP, "The audit can be part of the ongoing EHSS management system". Certificate for management system of the Company as per ISO-14001:2015 covers "Performance of repair, installation and renovation works". The last surveillance audit of the management system on this certificate was carried out on 10.10.2021-19.01.2022 The results were sent to Lenders 27.06.2022. |
| 5 | 1.1 | H\&S Audit every 3 years | RP,RC | For the first time independent external audit was carried out in 2015, the results were sent to Lenders 31.07.2015. The next audit was carried out in 2018, the results were sent to Lenders 16.07.2018. According to the it.1.1 of ESAP, "The audit can be part of the ongoing EHSS management system". Certificate for management system of the Company as per ISO-45001:2018 covers "Performance of repair, installation and renovation works". The last surveillance audit of the management system on this certificate was carried out on 10.10.2021-19.01.2022 The results were sent to Lenders 27.06.2022. |
| 6 | 1.2 | Published EHSS policy | RP | The Statements of Management were published at the official SE NNEGC "Energoatom" site from 2014. It publishes the Company's strategic goals and plans, as well as the goals for 2022. |
| 7 | 1.2 | Structure chart of EHSS management, including environmental department and definition of its functions | RP | The detailed structure chart of EHSS management is presented in PIP. |
| 8 | 1.3 | Development of EMSP covering each NPP. Certification of MS for compliance with international standard ISO-14001 | RP | Initial certification of MS of SE NNEGC "Energoatom" Directorate and SS for compliance with international standard ISO14001 was arranged in 2013-2014. Regular re-certification of MS of SE NNEGC "Energoatom" was made in 2019. |
| 9 | 1.3 | Raising the role of the existing H\&S management subdivision. Certification of MS for compliance with standard OHSAS18001 | RP | The detailed description of H\&S management presented in PIP and ESM Report: 2013-2014. The initial MS certification for compliance with standard OHSAS-18001 was made in 2016, regular re-certification for compliance with standard ISO-45001:2018 (replacing OHSAS-18001) was made in 2019. |
| 10 | 1.4 | Provision of public relation activity with the qualified personnel | RP | The detailed description of IPR management and activity presented in PIP and ESM Report: 2013-2014. |

# ESAP realization during 2022 Actions on environmental, health and safety management 

| No | ESAP, par | Action/ Indicator name | Realization status | Comment |
| :---: | :---: | :---: | :---: | :---: |
| 11 | 1.4 | Maintenance of SE NNEGC "Energoatom" and SS NPP web-sites in the actualized state. Regular monitoring and promulgation of EHSS information | RP, RC | The official web-sites of SE NNEGC "Energoatom" and SS NPP work and were regularly updated, including EHSS issues. Due to the war unleashed by the Russian Federation against Ukraine on February 24, 2022, the operation of the site was temporarily suspended, the most important information was published on the Company's Facebook page. During the reporting period, the functioning of the site is restored. The activity monitoring results for previous years were presented in the previous ESM Reports, for current year it will be presented in ESM Report: 2022. |
| 12 | 1.5 | Monitoring of specialists' training for work in the industry on the basis of training institutions of the appropriate profile | RP, RC | The activity monitoring results for previous years were presented in the previous ESM Reports, for current year it will be presented in ESM Report: 2022. |
| 13 | 1.5 | Improvement of personnel qualification on the basis of Personnel Training Centers | RP, RC | The activity monitoring results for previous years were presented in the previous ESM Reports, for current year it will be presented in ESM Report: 2022. |
| 14 | 1.6 | Development of template of the annual Report on Environmental and Social Matters (ESM Report) | RP | Template of the annual Report on Environmental and Social Matters is attached to PIP. |
| 15 | 1.6 | Annual ESM report | RP | ESM Report: 2013-2014 was sent to EBRD 27.02.2015. ESM Report: 2015, 2016, 2017 2018, 2019, 2020 were sent to Lenders 01.03.2016, 07.03.2017, 28.02.2018, 04.03.2019, 28.02 .2020 and 16.03 .2021 correspondingly. Due to the war unleashed by the Russian Federation against Ukraine, completion of the ENP Report: 2021 was stopped. The summary of ESM activity for 2021 was included in the Borrower's Quarterly Report for the 4th quarter of 2021 sent to Lenders 31.01.2022. |
| 16 | 1.7 | Obtaining all required EHSS licenses and permits and following their requirements | RP,RC | The list of valid licenses presented in the PIP. The activity monitoring results for previous years were presented in previous ESM Reports, for current year it will be presented in ESM Report: 2022. |
| 17 | 1.7 | Information provision and consultations with the public on compliance with terms and conditions of licenses and permits | RP, RC | Consolidated monitoring results for previous years were presented the previous ESM Reports, for current year it will be presented in ESM Report: 2022. |
| 18 | 1.7 | Immediate reporting to EBRD on any actual non-compliance with licenses and permits | NN | The facts of failure to meet terms and conditions of licenses and permits were not detected during the reporting period, except for the situation at ZNPP. As a result of the war unleashed by the Russian Federation against Ukraine on February 24, 2022, the territory of ZNPP is currently occupied, the SNRCU has lost regulatory control over this station. ZNPP are operated by its personnel. Information on the situation at ZNPP was provided in the Borrower's Quarterly Report for the 1st quarter of 2022, sent to Lenders 29.04.2022. |
| 19 | 1.8 | Development and promulgation of NTS related to LTE of the operating power units including EHSS matters in Ukrainian and English | RP | In 2015 the NTS on EIA materials of ZNPP and SUNPP in particular related to its energy units LTE were published. The NTS on EIA materials of ZNPP power units No 3 and 4 was published 17.02.2017, RNPP units No $3-12.06 .2018$, KhNPP units No 1-30.05.2018, ZNPP units No 5-23.03.2020. |
| 20 | 1.8 | Planning of NTS promulgation within the frames of SEP | RP | The NTS promulgation activity foreseen in CCSUP SEP. SE NNEGC "Energoatom" standard regarded requirements to SEP development put into force in 2016 provides accorded activity within any other investment projects. |

# ESAP realization during 2022 Actions on environmental, health and safety management 

| No | ESAP, par | Action/ Indicator name | Realization status | Comment |
| :---: | :---: | :---: | :---: | :---: |
| 21 | 1.9 | Implementation of EIA for the new investment projects, for which it is required by the Ukrainian legislation, following provisions of Aarhus Convention and Espoo Convention | RP,RF,RC | The new investment projects, which require EIA, were not started during the reporting period. The Announcement on Planned Activity on erection of KhNPP power units No 3,4 was introduced into EIA Register http://eia.menr.gov.ua/places/view/2231. The updated Feasibility Study Report was approved by CM of Ukraine in 2018. The updated EIA Report for the KhNPP power units No 3,4 was published in 2019. In the same year Minpryrody completed a cycle of public discussions of the EIA for the KhNPP power units No 3,4 in Ukraine, the corresponding transboundary consultations was finished. The Announcement on Planned Activity on operation of RNPP power units No 1-4 was introduced into EIA Register http://eia.menr.gov.ua/places/view/76 . During 2019 Minpryrody completed a cycle of public discussions of the EIA for RNPP in Ukraine. The transboundary consultations on EIA for ZNPP, RNPP and PNPP are suspended until the end of the war waged by Russia. |
| 22 | 1.9 | Promulgation and making available for public the EIA materials | PP, RC | EA Report of CCSUP, NTS on updated EIA materials of units No3,4 KhNPP erection, NTS on EIA materials of ZNPP and SUNPP, EIA Report for Oleksandrovsk water pool level raise and EIA Report for RNPP were kept available at the SE NNEGC "Energoatom"/SS NPP official web-sites and\}/or in EIA Register. Due to the war waged by the Russian Federation against Ukraine on February 24, 2022, the operation of the Company's website was temporarily suspended. During the reporting period, the functioning of the site is restored. |
| 23 | 1.10 | Cooperation with authorities to facilitate the government-togovernment consultations under Espoo Convention for the projects that may have a considerable transboundary impact | RP,RF, RC | The activity monitoring results for previous years were presented in the previous ESM Reports, for current year it will be presented in ESM Report: 2022. In 2019 Minpryrody completed a cycle of public discussions of the EIA for RNPP and the EIA for KhNPP power units No 3,4 in Ukraine, the corresponding transboundary consultations for the KhNPP is finished in 2021. The transboundary consultations on EIA for ZNPP, RNPP and PNPP are suspended until the end of the war waged by Russia. |
| 24 | 1.10 | Registration of all consultations and information feedback under projects that may have a considerable transboundary impact | RC | The activity monitoring results for previous years were presented in the previous ESM Reports, for current year it will be presented in ESM Report: 2022. |
| 25 | 1.11 | Development of internal procedures for EIA performance for the new investment projects and re-licensing of the power units | RC | The Law of Ukraine "On Environmental Impact Assessment" was put into force 18.12.2017. Development of the draft accorded SE NNEGC "Energoatom" standard was started in the 2-nd quarter 2017. Its completion was postponed up to approval of the EIA necessity criteria and transboundary and public consultations procedures on EIA by CM of Ukraine. The regarded criteria was approved by CM of Ukraine latterly 2017. Adjustment of the consultations procedures CM of Ukraine was continued. Elaboration of the draft standard is suspended until the end of the war waged by Russia. |
| 26 | 1.11 | Development of the internal procedures of SEP development for the new investment projects and re-licensing of the power units | RP | SE NNEGC "Energoatom" standard regarded requirements to SEP development for investment projects was put into force in 2016. |

# ESAP realization during 2022 Actions on environmental, health and safety management 

| No | ESAP, <br> par | Action/ Indicator name | Realization <br> status | Comment |
| :--- | :--- | :--- | :--- | :--- | :--- |

## ESAP realization during 2022 <br> Actions at NPP



ESAP

| Action/ Indicator name |  |
| :--- | :--- |
| Current monitoring of operated NPPs impact <br> on the environment |  |

Promulgation of monitoring results of the operated NPPs impact on the environment

## Improvement of the monitoring around

 operated NPPSEvaluation of risks of radiation factors impact as a part of EIA for the new projects Promulgation of nuclear safety information via publications in mass media, radio ads and provision of information on the website of the Company
Development and introduction of educational materials for safe behavior of people in / near NPP
Identification of hazards, evaluation of risks and selection of appropriate risk management tools

Training of the personnel (one's own and the contractors') for H\&S, in particular for PPE use

| Personnel provision with PPE | RP, RC |
| :--- | :--- |

Improvement of H\&S regulatory documents
(procedures, manuals, etc.)
Realization
status

RP, RC

For radiation aspects the activity goes on in frames of ALARA principle implementation. Non-radiation aspects were considered during preparation to the MS certification for compliance with standard OHSAS18001 (primary certification was finished in 2016, next re-certification for compliance with standard IsO
$45001: 2018$ was finished in 2019, MS improvement is continued). The activity monitoring results for previous years were presented in the previous ESM Reports, for current year it will be presented in ESM Report: 2022.

The activity monitoring results for previous years were presented in the previous ESM Reports, for current year it will be presented in ESM Report: 2022

The activity monitoring results for previous years were presented in the previous ESM Reports, for current year it will be presented in ESM Report: 2022.
Primary MS certification for compliance with standard OHSAS-18001 was finished in 2016, next recertification for compliance with standard ISO-45001:2018 was finished in 2019, improvement of normative documents is ongoing. The activity monitoring results for previous years were presented in the previous ESM Reports, for current year it will be presented in ESM Report: 2022.

# ESAP realization during 2022 <br> Other actions 

| No | ESAP, par | Action/ Indicator name | Realization status | Comment |
| :---: | :---: | :---: | :---: | :---: |
| 1 | 3.1 | Determination together with Lenders of PMU Consultant experts for EHSS | RP | The formation of EHSS expert group was completed on 16.12.2014. |
| 2 | 3.1 | Permanent cooperation with the PMU Consultant expert group on EHSS | RC | PMU Consultant EHSS activity performed during the reporting period includes SE NNEGC "Energoatom" support, particularly: in planning and reports preparation, experience transfer to the Company specialists and monitoring of ESAP, SEP measures realization and other SE NNEGC "Energoatom" EHSS activity. |
| 3 | 3.1 | Independent review of the contractors' Project activity on EHSS by PMU Consultant experts Submission of reports to the Lenders | RP, RC | The corresponding chapter of PMU Consultant Report for the $2^{\text {nd }}$ quarter of 2022 was developed based on the independent review results. |
| 4 | 3.1 | Development of Energoatom's Corporative Social Responsibility system | RP | The Non-financial reports of NNEGC "Energoatom" (Report on CSR) were elaborated start from 2016. The last report is published in the reporting quarter. |
| 5 | 3.2 | Availability of EPR system including notification of population and governmental emergency services and divisions | RP | The emergency response plans exist and are periodically revised for all SS NPP SS ETC and Directorate of SE NNEGC "Energoatom". |
| 6 | 3.2 | Improvement of the system of early notification of population regarding the emergencies at NPPs | RP, RC | The last improvements are reflected in the Provision on the organizing of alerts approved by CoM of Ukraine of 27.09.2017. Local executive authorities (local governments) responsible for notifying the population are recommended to increase the operational coverage of the population by providing the unprotected layers (invalids, pensioners, etc.) of mobile FM receivers free of charge (at the expense of funds allocated for socioeconomic compensation of risk). The further improvement of alerts system is determined by the Concept of development and technical modernization of the system of centralized alert about the threat of emergencies or emergency arising approved by CM of Ukraine early 2018. |
| 7 | 3.3 | Reporting on regulatory and legal support, capital investments and schedules of RW handling measures realization | RC | During the reporting quarter the measures regarding the current RW management, RW generation minimization, creation of new facilities for RW management, improvement of technologies and methods for RW management were realized in scope determined by the "The Complex Program of Radioactive Waste Management at SE NNEGC Energoatom" ПM-Д.0.18.174-21 put into force on 06.05.2022. No other change of SE NNEGC "Energoatom" normative base regarding RW management issues were occurred during reporting period. <br> Monitoring of new RW handling facilities creation to the form acceptable for LTSD realize in MS Project format. Now the version of Gantt chart at the beginning 2022 is actual. The chart will be adjusted after the end of the war. |
| 8 | 3.3 | PMU quarterly reporting on work progress for creation of new RW treatment facilities | RC | Monitoring of new RW handling facilities creation to the form acceptable for LTSD realize in MS Project format. The corresponding information are given by PMU Consultant to the Lenders within the quarterly PMU Consultant Reports. Now the version of Gantt chart at the beginning 2022 is actual. The chart will be adjusted after the end of the war. |
| 9 | 3.3 | PMU quarterly reporting on tax payment for future RW transfer to long-term storage / disposal | RC | According to the Law of Ukraine "On Radioactive Waste Management", Cl.4, the state provides RW producers paying environmental tax, which is charged for RW generation and interim storage, with guarantees of acceptance for storage/ disposal without extra payments of the whole volume of RW generated during such producers' operation. The costs paid by the producers build up the State Fund for Radioactive Waste Management (RW Fund). SE NNEGC «Energoatom» pays quarterly the appropriate costs starting with May 2009 including of $1^{\text {st }}$ quarter of 2022. |

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## Goal and tasks of SEP

Main goal: to establish and to maintain constructive long-term relations with persons, which have or may potentially have impact from CCSUP implementation, and with other stakeholders regarding the CCSUP implementation, both domestically and abroad:
$\checkmark$ information promulgation to ensure consultations with stakeholders;
$\checkmark$ meaningful consultations with stakeholders;
$\checkmark$ policy and procedures implementation, in accordance whereof the stakeholders can express their comments or submit grievances.

## SEP determine:

$\checkmark$ stakeholder lists (updated periodically);
$\checkmark$ order and procedures of stakeholder engagement to meaningful consultations;
$\checkmark$ schedule of public meetings of CCSUP implementation;
$\checkmark$ SE NEGC "Energoatom" contact information;
$\checkmark$ Submission and processing mechanisms for questions, comments and grievances.


## Project Stakeholders




Stakeholders database


## Information promulgation channels

$\checkmark$ information messages and materials on the official web-sites of Energoatom and 4 NPPs;
$\checkmark$ information messages on web-pages of Energoatom in social networks;
$\checkmark$ theme programs, interviews and broadcasting on local, regional and national TV- and radio channels;
$\checkmark$ theme articles and interviews in printed mass media;
$\checkmark$ updated information messages on telephone answering machines;
$\checkmark$ distribution of materials by e-mail;
$\checkmark$ distribution of printed materials under stakeholders' request in cases and in the manner, prescribed by the law;
$\checkmark$ distribution of information through the External Communication Information Centre of Energoatom and Information Centers of 4 NPPs;
$\checkmark$ distribution of information materials via other non-electronic information channels.

## Public discussion of LTE of ZNPP unit 5



## E) <br> تН탕ㅇㄱㅇㅣ

## Public discussion of next CCSUP Ecological assessment scoping



Due to the war started by the Russian Federation on February 24, 2022, the next EA is suspended until the end of military operations on the territory of Ukraine.

## Scheme of grievance processing



## Report on public appeals was quarterly published at "Energoatom" web-site

## Processing of SE NNEGC Energoatom personnel and other citizens' appeals during the IIIrd Quarter, 2021

Processing of appeals addressed to SE NNEGC «Energoatom» is carried out according to the Law of Ukraine "On Public Appeals" http://zakon2.rada.gov.ua/laws/show/393/96Bp under the procedure determined in the Provisions on procedure for citizens' appeals to SE NNEGC Energoatom ПЛ-К.0.07.059-18. Under appeals one shall understand proposals (comments), statements (petitions) and grievances, performed and presented in writing or verbal.

In connection with the war launched by the Russian Federation on February 24, 2022, the publication of information was temporarily suspended and will be resumed after the end of hostilities on the territory of Ukraine.

## Collection and processing of public questions, remarks and comments

 as attachments to "Questions-Answers book about CCSUP"

## Development of normative base



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Кабінет Міністрів Yкраїни постановля
1. Затвердити Державну економінну програму поводження з відпрацьованим ядерним паливом вітчизняних атомних
електростаниій на період до }2025\mathrm{ року (далі - Програма), що додасться.
2. Внести до розпорядження Кабінету Міністрів України від 5 чериня }2019\mathrm{ р. No 385 Про схвалення Концепцї
Державной ехономічної програми поводження з відпрацьованим ядерним паливом вітчизняних атомних
електростанцій на період до }2024\mathrm{ року" (Офіційний вісник України, 2019 р.N` 47, ст. 1626) тахі зміни:
1) у назві та тексті розпоридження цифри "2024" замінити цифрами "2025";
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вітчизняних атомних електростанцій на період до }2024\mathrm{ року. ехваленої зазначеним розпорядженням. цифри "2024
замінити цифрами "2025"
енергетики щороку до 1 квітня ззіти про резупьтати здійснення заходів Програми та про вппив здійснення захоя
Програми на довкілля, зокрема на здоров'я населення.
за результатами анапізу звітів про вппив здійснення заходів Програми на довкіпля, зокрема на здоров'я насепення
щороку оприлюднювати на офіційному ве6-сайті Міністерства інформаціо в рамках заходів для проведенн
моніторингу наспідкхвв еиконання Програми
    Прем'єр-міністр Украйни д. шмиГАль
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[^0]:    E) EHEPROATOM

[^1]:    E) EHEPROATOM

