



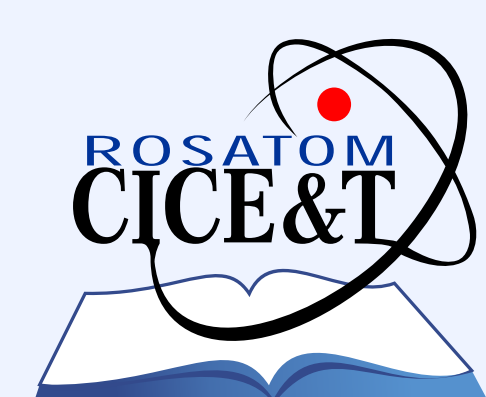
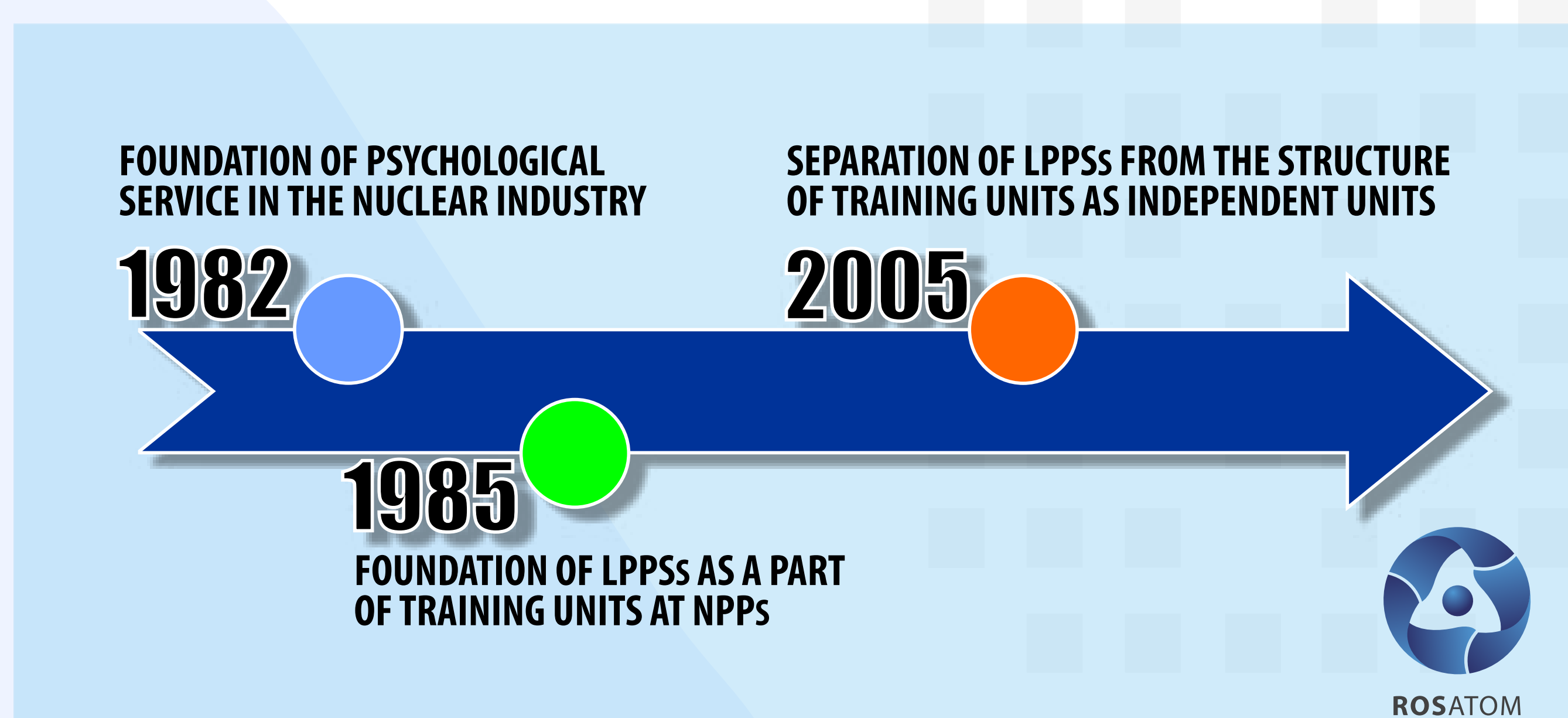
# EXPERIENCE OF PSYCHOLOGICAL SERVICE OF ROSENERGOATOM IN ENSURING THE RELIABILITY OF THE HUMAN FACTOR

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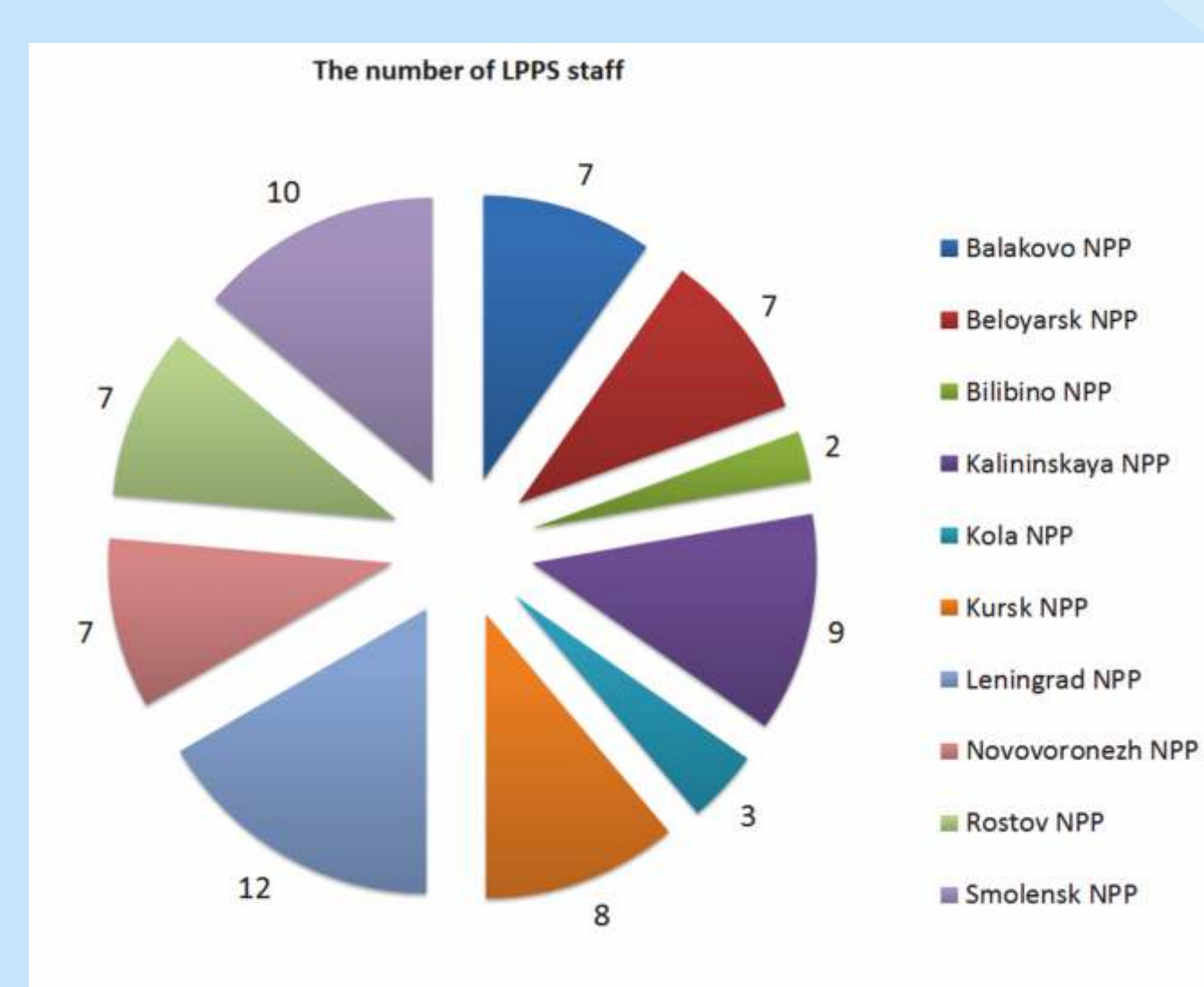
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To ensure safe and efficient operation of nuclear power plants the laboratories of psycho-physiological support (LPPS) were established at Russian NPPs since 1982 [1]. The methodological background for this was later published in Ref. [2].



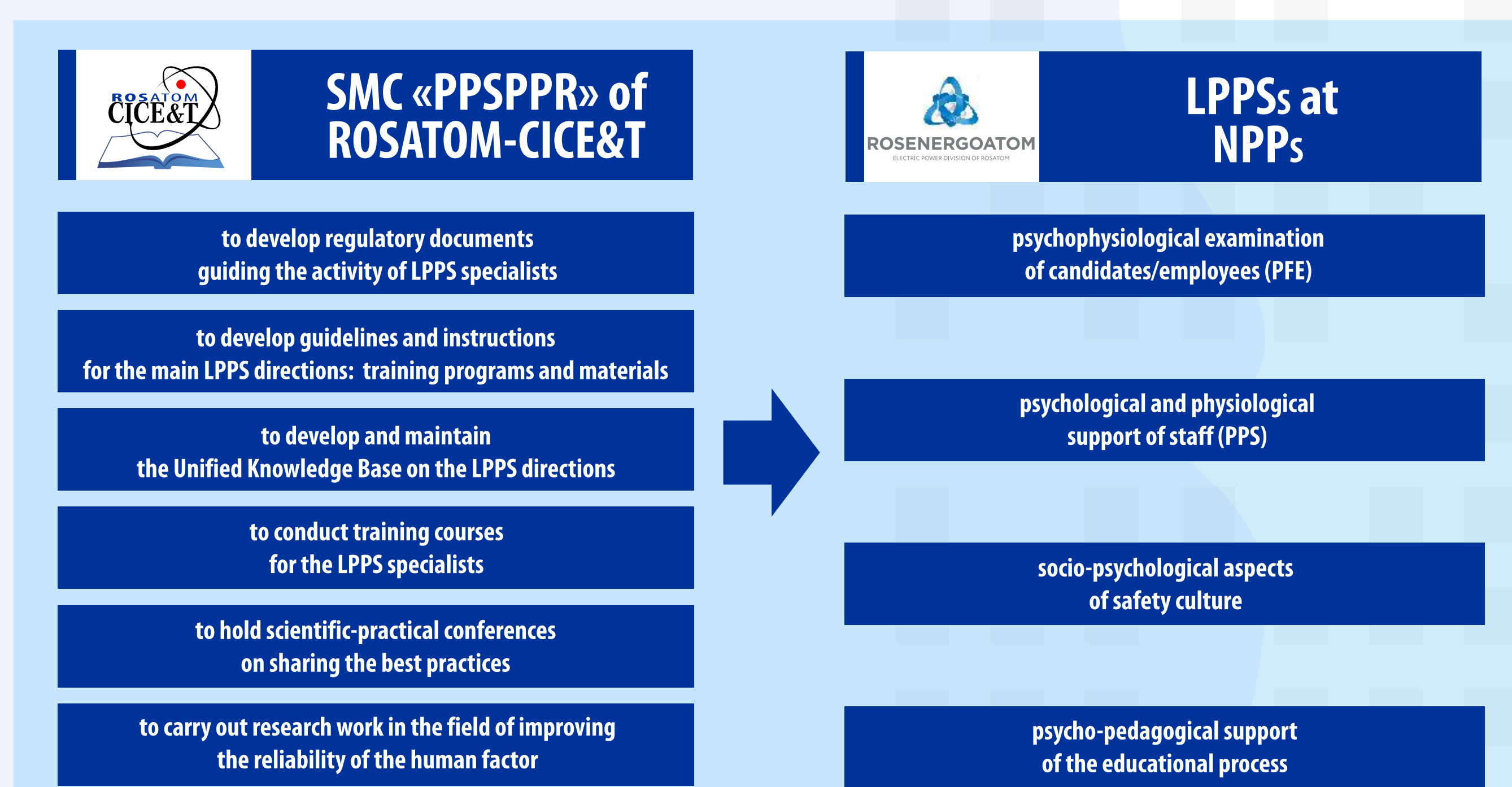
The activity and professional development of LPPS specialists are currently supported by the Scientific-Methodological Center "Psycho-Physiological Support of Personnel Professional Reliability" (The SMC "PPSPPR") of Rosatom Central Institute for Continuing Education and Training (ROSATOM-CICE&T) [3].



The Heads of LPPSs at NPPs



## THE MAIN TASKS OF THE SCIENTIFIC-METHODOLOGICAL CENTER «PPSPPR» OF ROSATOM-CICE&T



## PSYCHOPHYSIOLOGICAL EXAMINATION OF CANDIDATES/EMPLOYEES (PFE)

The PFE purpose is to select NPP candidates/employees and control psychophysiological properties and professionally important qualities. It is essential to detect early signs of psychological maladjustment and other disorders that reduce personnel professional reliability affecting NPP operating safety.

The predictive effectiveness of PFE results is more than 80 percent. It is assessed by getting a feedback from NPP management on the employees' performance.

The specialists of The SMC "PPSPPR" developed the following documents:

- List of positions of NPP employees subject to PFE survey (2011)
- Guidelines for conducting PFE of NPP employees (2012)
- Order of psychophysiological examination of NPP employees (2013)

## PSYCHOLOGICAL AND PHYSIOLOGICAL SUPPORT OF STAFF (PPS)

The purpose of PPS is to maintain and improve professional performance to prevent wrong actions of the staff. PPS consists of preventative and corrective activities.

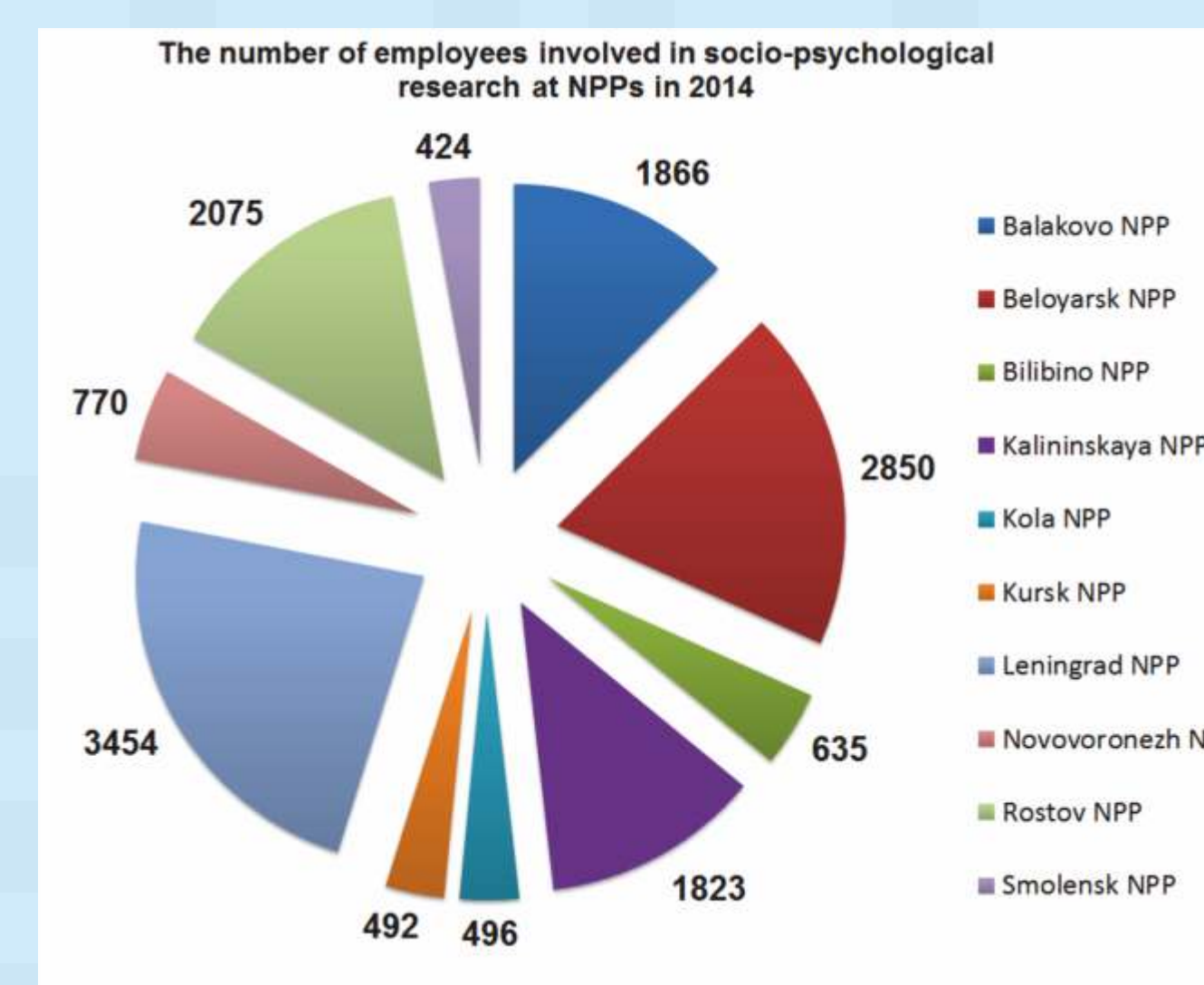
In 2014, the LPPS experts conducted group PPS activities for 1929 people and individual activities for 2292 people.

Before and after these activities we conduct psychological examination of subjective and objective indicators of the participants' functional status. The results of this examination show positive dynamics in performance.

## SOCIO-PSYCHOLOGICAL ASPECTS OF SAFETY CULTURE

The activities of this direction are implemented taking into account the recommendations of the IAEA, WANO, Rosenergoatom [4, 5].

LPPS specialists take part in accident investigation commissions. Their task is to conduct psychological analysis of the causes of employees' wrong actions.



The research involved 14 885 people

## EXAMPLES OF RESEARCH TOPICS:

- Assessment of organizational culture at NPP
- Assessment of the socio-psychological climate in units
- Assessment of the safety culture indicators at NPP

## PSYCHO-PEDAGOGICAL SUPPORT OF THE EDUCATIONAL PROCESS

Psycho-pedagogical support of the educational process includes:

- conducting group and individual activities on psychological training
- psychological and pedagogical support of emergency training of the operational personnel at a full-scale simulator
- development of psycho-pedagogical recommendations on an individual approach to operational personnel training.

The specialists of The SMC "PPSPPR" developed the following educational materials:

- Application of self-control techniques
- Operational personnel communications
- Stress management in emergency situations
- Conflict management
- Teamwork
- Psychological aspects of safety culture
- Critical attitude

The results of the corporate peer review of Rosenergoatom, conducted by WANO, have shown the positive results of LPPS specialists' involvement in:

- investigation of accidents
- staff selection to NPP
- preventive management of stressful situations.

WANO experts noted that LPPS activity positively affects the nuclear power plants operation and is one of the strengths of Rosenergoatom.

The unified efforts of The SMC "PPSPPR" and LPPS specialists increase the reliability of the human factor and NPPs safety.



## REFERENCES

- [1] The Order of Russian Federation Ministry of Atomic Energy of 30.08.2000 No. 532 «About Introduction of Provision on the Laboratories of Psycho-Physiological Support of Object of Use of Atomic Energy».
- [2] Abramova V.N., Belekho V.V., Belsky E. G., and others. Psychological methods in the work with personnel at NPPs, Moscow, Russia (1990).
- [3] The Order of Rosenergoatom Concern OJSC of 13.05.2010 No. 582 «About Scientific and Methodological Guidance in the Field of Personnel Training and Psychophysiological Examination».
- [4] Safety Culture in Nuclear Installations: Guidance for Use in the Enhancement of Safety Culture, No. IAEA-TECDOC-1329, IAEA, Vienna (2002).
- [5] Traits of a Healthy Nuclear Safety Culture, No. WANO GL 2013-1, WANO (2013).

