



РОСАТОМ

ГОСУДАРСТВЕННАЯ КОРПОРАЦИЯ ПО АТОМНОЙ ЭНЕРГИИ «РОСАТОМ»

Safety Culture improvement: from multimodality to synergy

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**TECHNICAL MEETING on
Safety Culture during Pre-Operational Phases —
Practical Working Methods to Increase Safety**

**IAEA, Cape Town, South Africa
26 – 30 November 2012**

Personal definition of SC

Safety culture

is a representative set of individual and organizational variables encoded in such a way that safety is an overriding goal, background and outcome for each cultural realization

SC is a *representative* set of individual and organizational variables encoded in such a way that safety is an overriding goal, background and outcome for each cultural realization

Representative means that the culture produces ideas, meanings and values which are valid under authority of factual acceptance among organization (society) members.

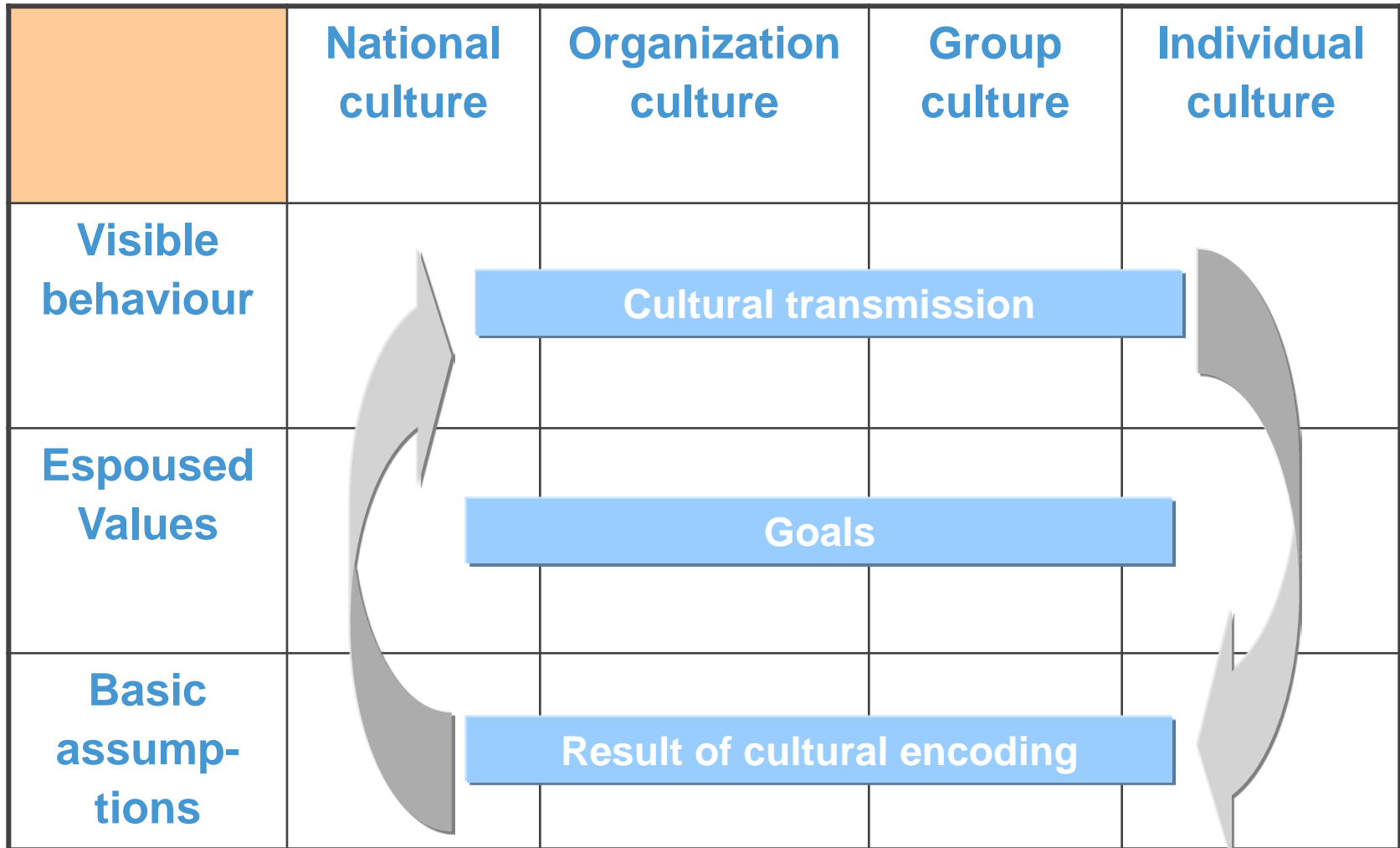
SC is a representative set of *individual and organizational variables* encoded in such a way that safety is an overriding goal, background and outcome for each cultural realization

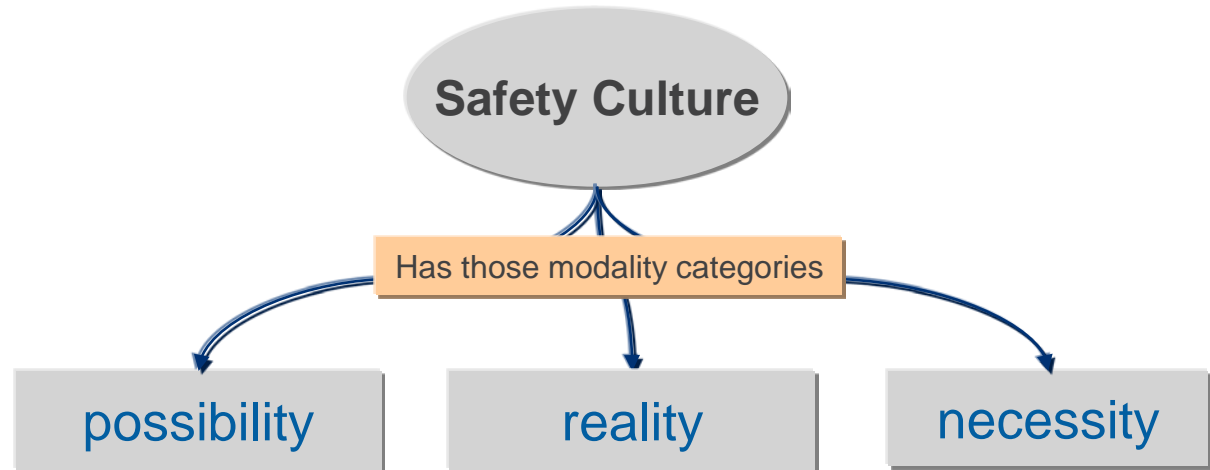
Individual variables: motives, system of values, attitudes, behavior patterns, ideas, individual traits, cognitive processes realization, knowledge, skills

Organizational variables: system of values, organizational behavior patterns, myths, symbols, organizational factors

SC is a representative set of individual and organizational variables *encoded* in such a way that safety is an overriding goal, background and outcome for each cultural realization

Encoded means that a sense of the concept of Safety has been translated and interiorized by individuals.





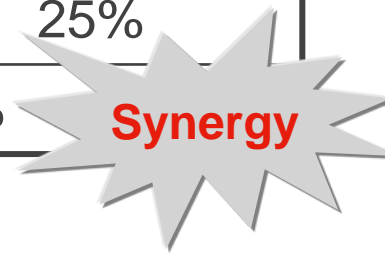
Mode 1

Mode 2

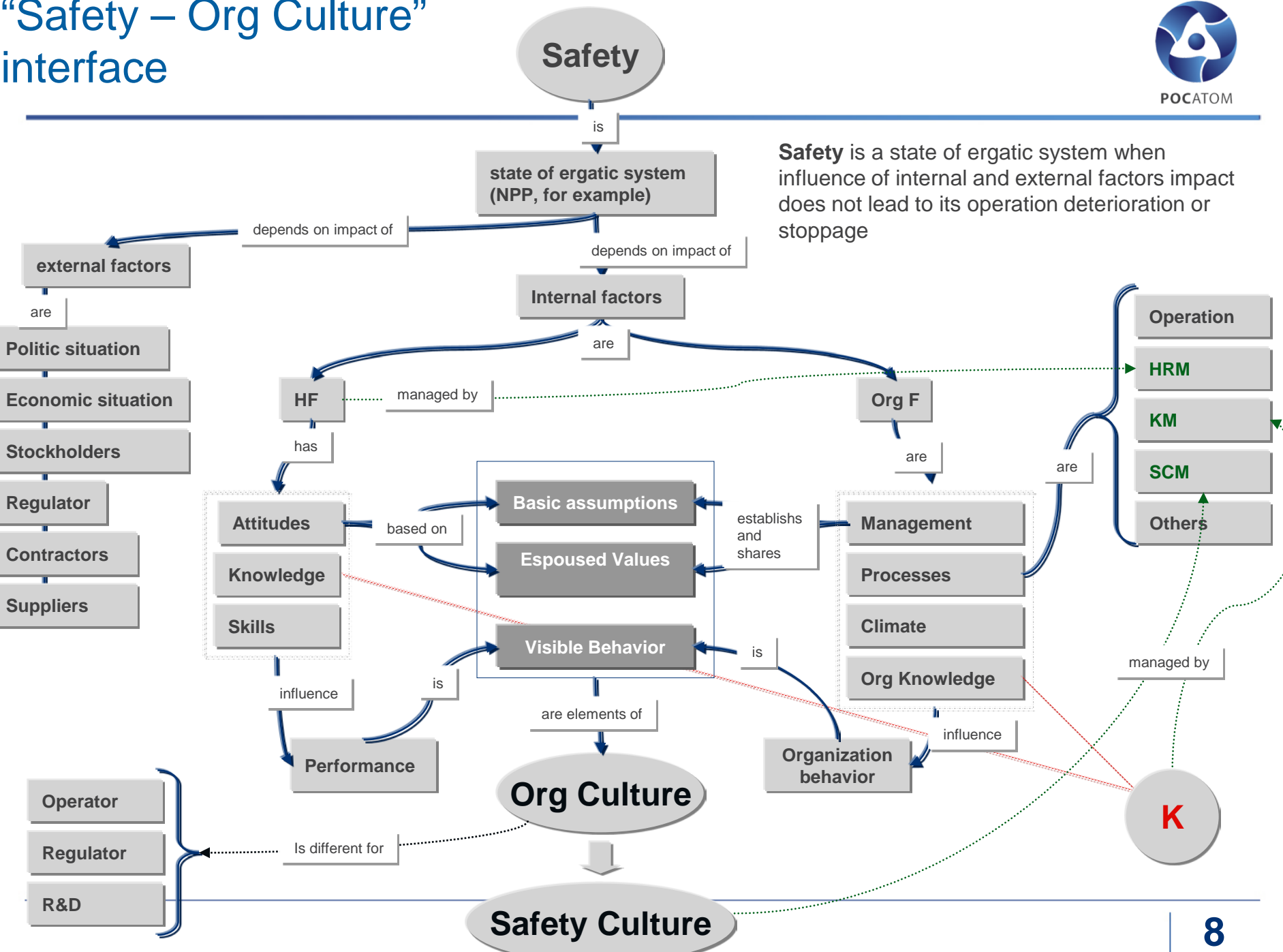
Mode N

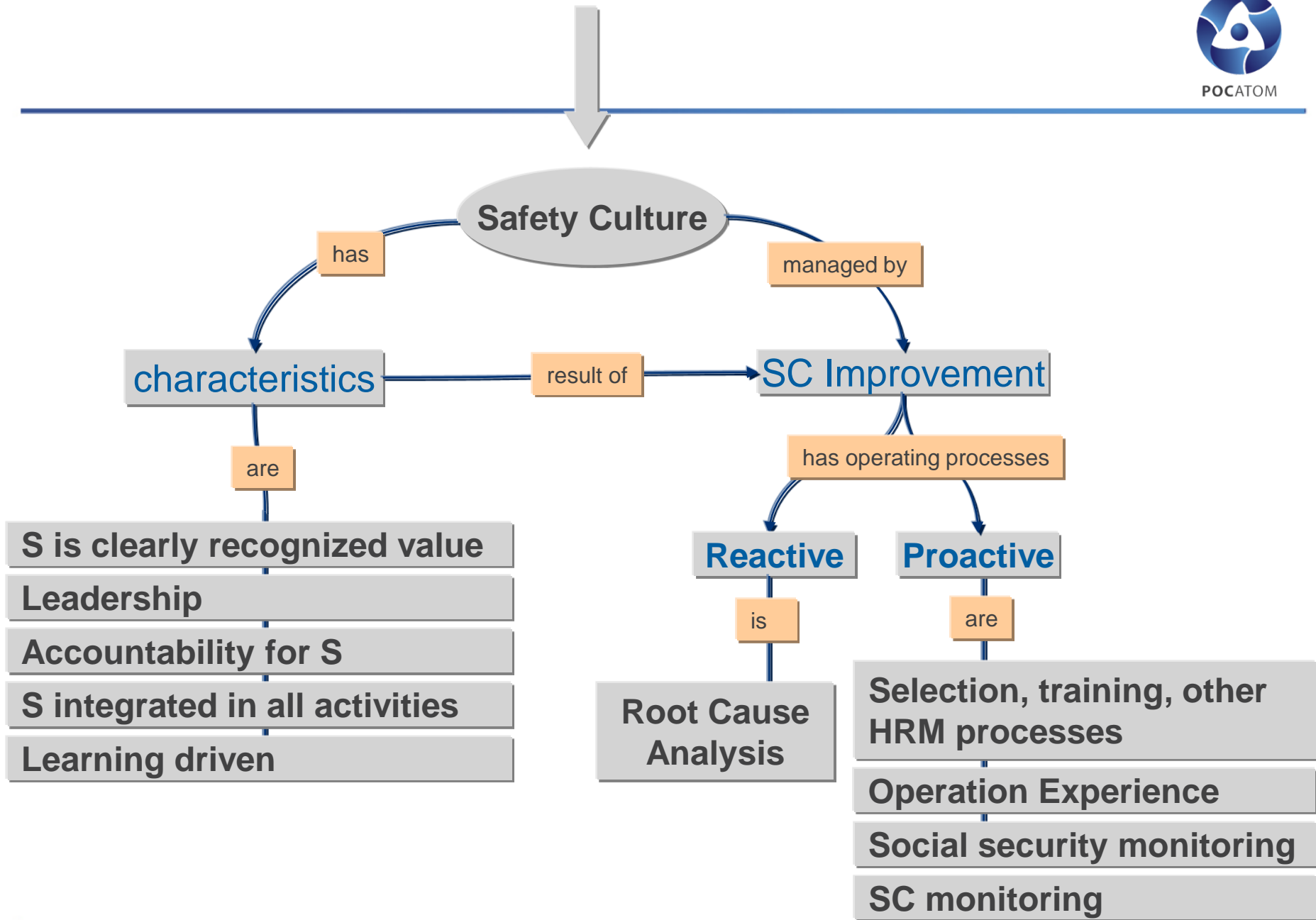
S - Mode

80%	15%	5%
40%	45%	15%
15%	60%	25%
5%	10%	85%



“Safety – Org Culture” interface







**Support SC management processes with
knowledge about human being**

Design of job post

NPP

NPP compartment

Job post

Main tasks

Main actions

Psychogram

Work environment

Individual competences profile

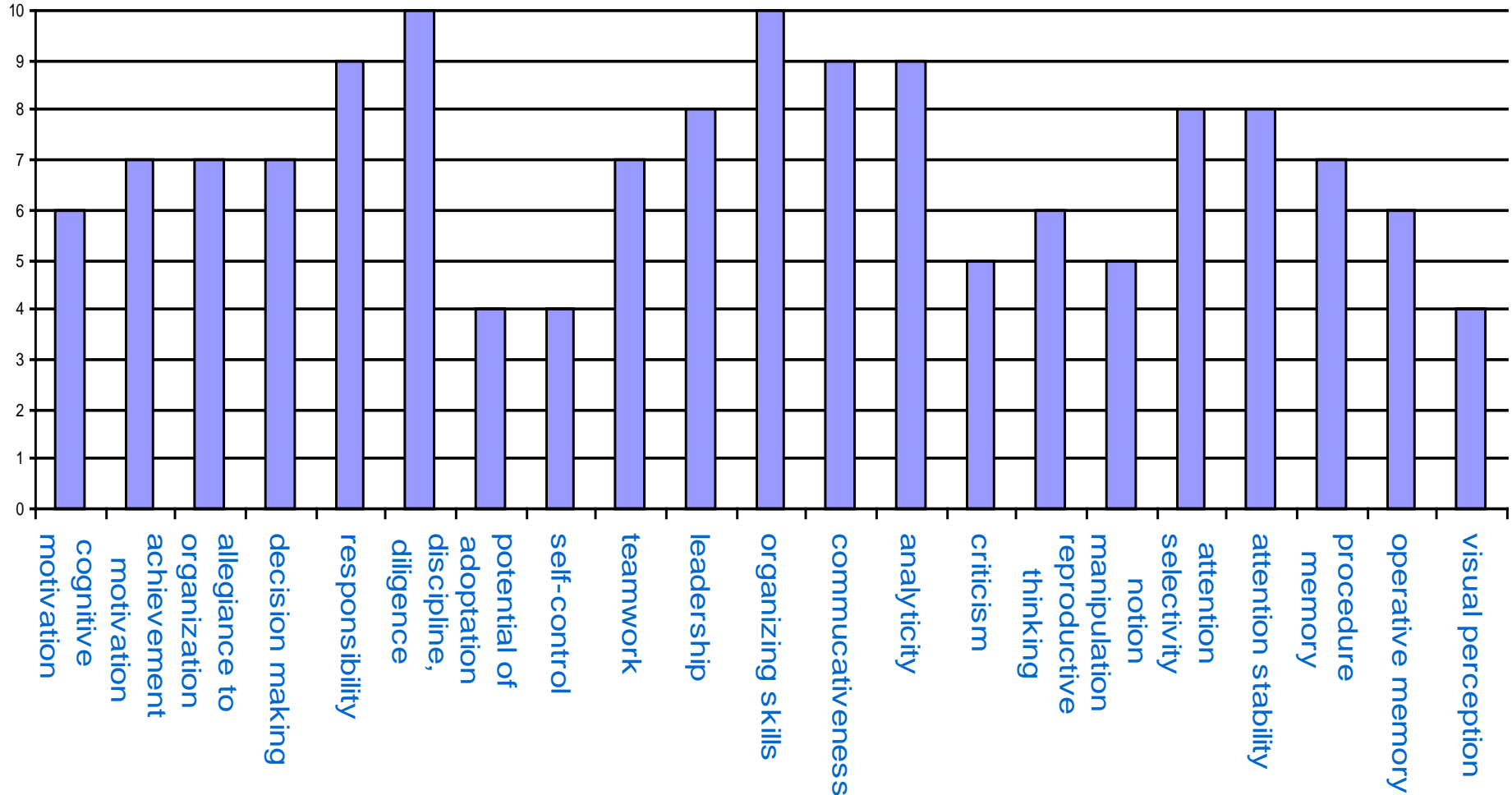
Professional competence profile

Work effectiveness criteria

Motivation potential

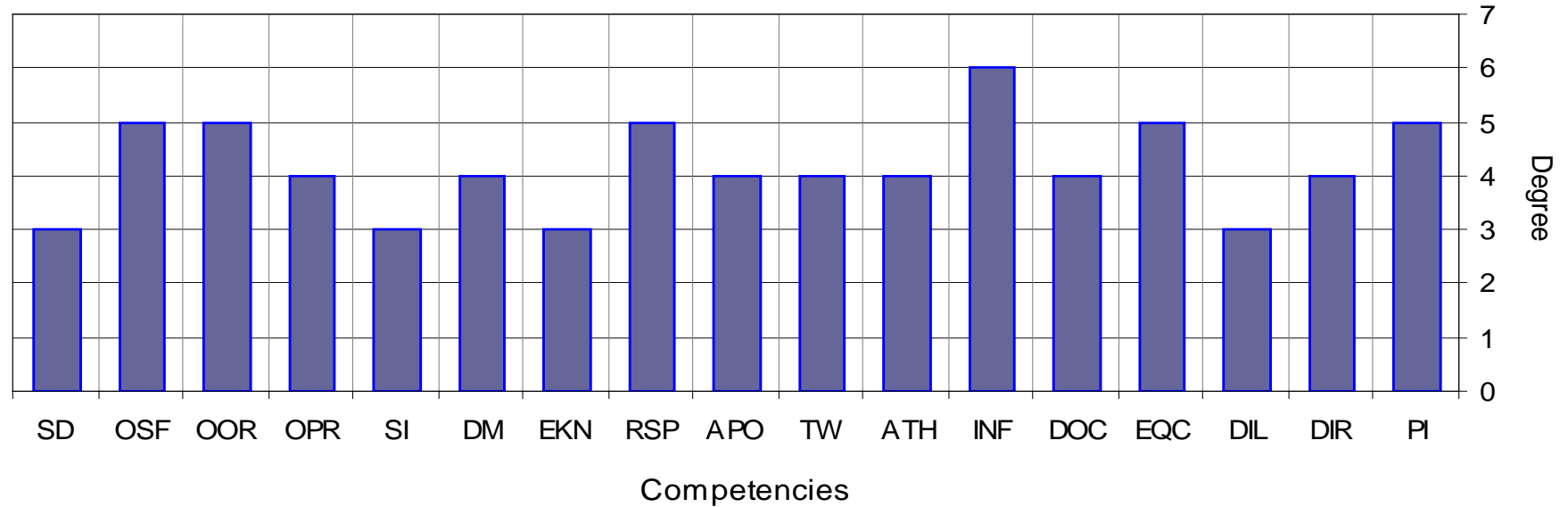
Design of job posts

Psychogramm for job post *Shift Manager of Reactor Division*

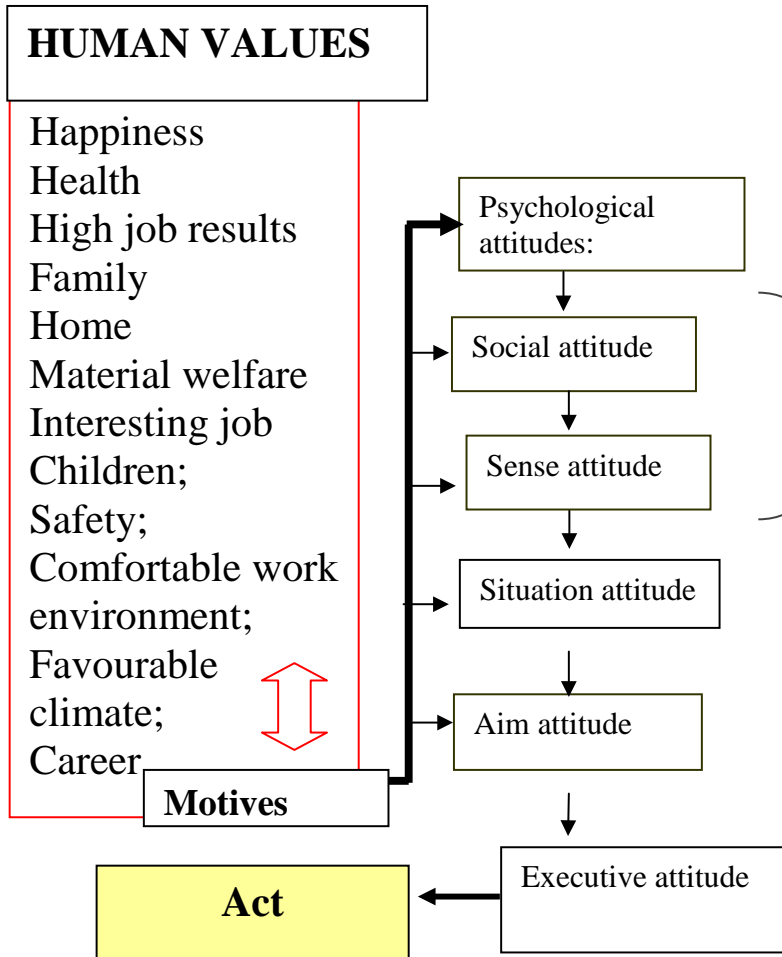


Design of job posts

Competence profile for job post *Shift Manager of Reactor Division*



Abridgements	Competence title	Abridgements	Competence title
PI	Interpersonal interaction	APO	Activity planning and organization
DIR	Directiveness and control	RSP	Responsibility
DIL	Diligence	EKN	Equipment knowledge
EQC	Equipment control	DM	Decision making
DOC	Work with documentation	SI	Information searching
INF	Informing	OPR	Operability
ATH	Analytical thinking	OOR	Orientation on result
TW	Teamwork	OSF	Orientation on safety
		SD	Self-discipline



Social attitude – civic duty; world-view; human values system; understanding what is good, what is bad; what is honestly, what is corruptly and so on.

Sense attitude. It defines personal sense of work for worker.

← Attitude to Safety

Situation attitude. It is formed when environment is estimated. Often to happen when social and sense attitudes are changed by estimation of situation.

Aim attitude appears when aim is formed, when worker knows what to do .

Definition:

Worker performs work in accordance with safety priority.
Worker aims, has intention to improve work environment,
documentation, equipment.

Competency “Orientation to Safety”

Scale - Intensity and completeness of activity addressed to safety



A.-2	Has inadequate orientation (attitude) for safe work implementation: knows safety requirements but breaks it with bad intention со злым умыслом нарушает их.
A.-1	Has no orientation (attitude) for safe work implementation: consciously ignores and/or does not know safety requirements.
A.0	Knows safety requirements and do not break them evidently.
A.1	Has an intention to work safely and/or supports others work safety during a work day.
A.2	Follows safe requirements when job preparation and implementation; notices timely beginning of declining situation. In accordance with job duties informs and control others supporting proper safety level.
A.3	Acts in accordance with safety priority. If situation with lack of absence or not enough operative information acts taking into account risks of the safety decreasing.
A.4	Proposes ideas on SC enhancement and ways how to realize.
A.5	Undertakes efforts to improve safety. Upholds a necessity to follow the safety requirements. When event situation makes arrangements to prevent the situation aggravation.
A.6	Involves others into SC enhancement process.
A.7	If necessary, risks own health and life to provide safety.



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- **Selection.**
 - **Adaptation.**
 - **Shift manning.**
 - **Psycho-physiological monitoring of NPP personnel state.**
 - **Participation in an event investigation team.**
 - **Participation in Safety Culture improvement process.**
 - **Psycho-pedagogic support in training.**
 - **Social-psychological monitoring.**
 - **Support for managers.**
 - **Psychological support for NPP personnel**
 - **Psychological rehabilitation for NPP personnel.**

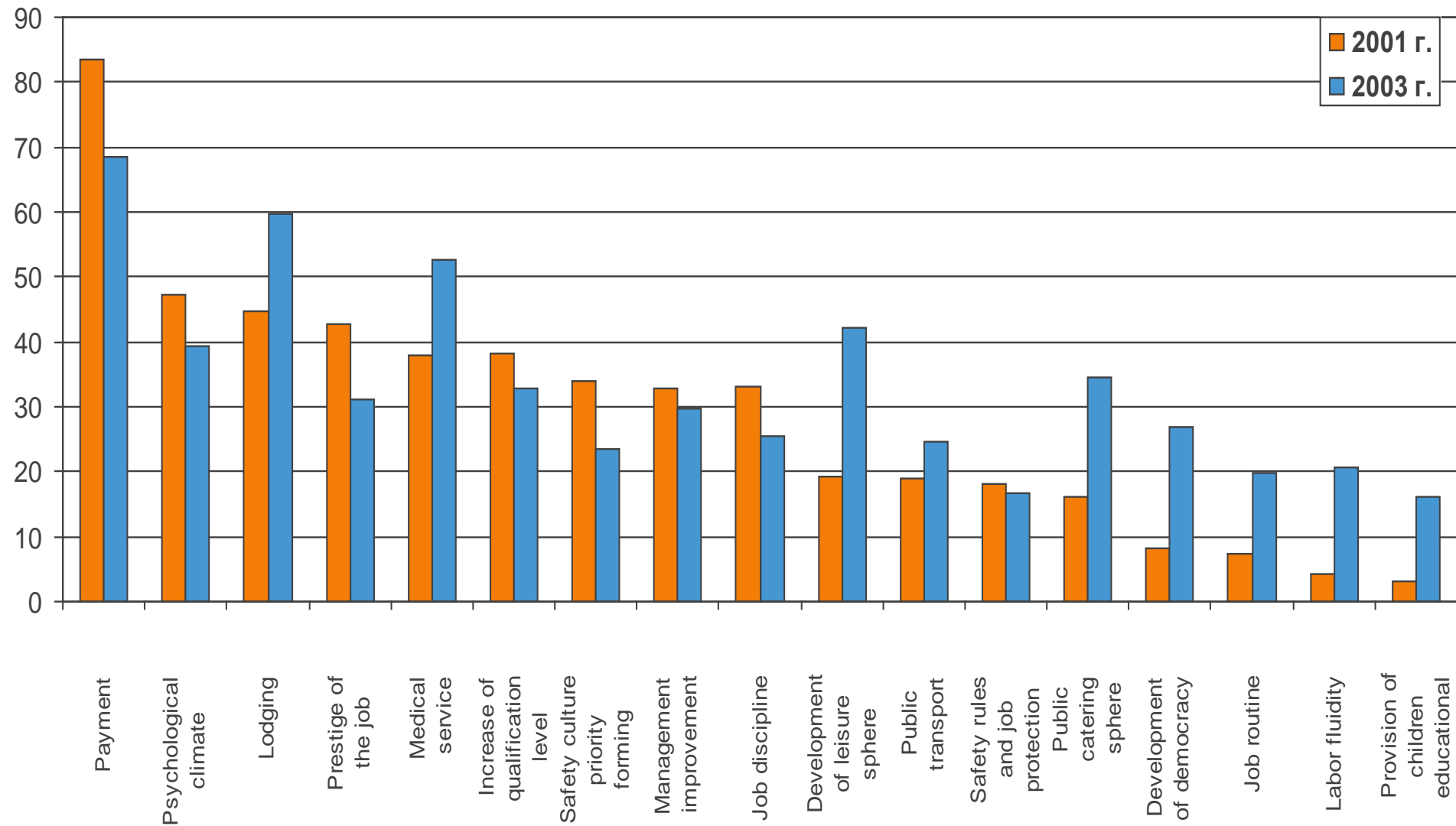
- Conducting lessons and trainings to form, enhance job relevant traits;
- Development recommendations on the individual approach to training;
- Psychological support to simulator training for response to emergencies ;
- Consulting to the training centre instructors;
- Operative shift manning on base of psychological compatibility.



Proactive approach : Social security monitoring



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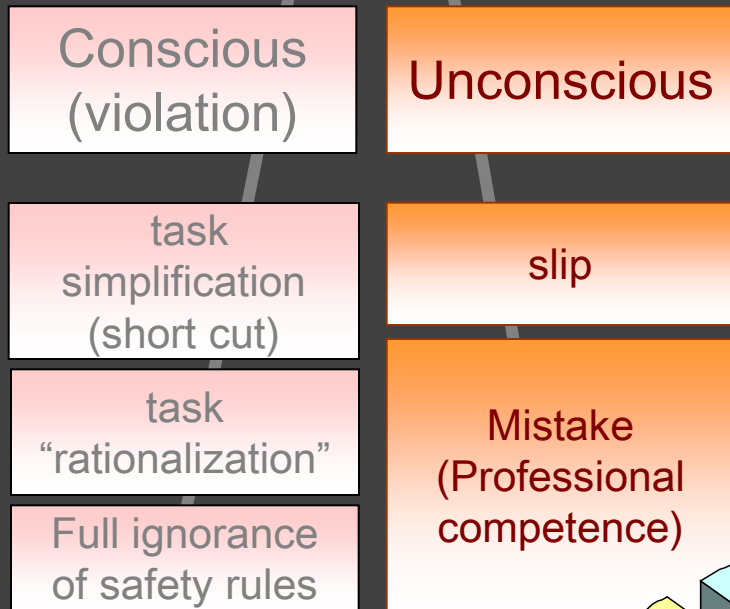


Reactive approach: ROOT CAUSE ANALYSIS



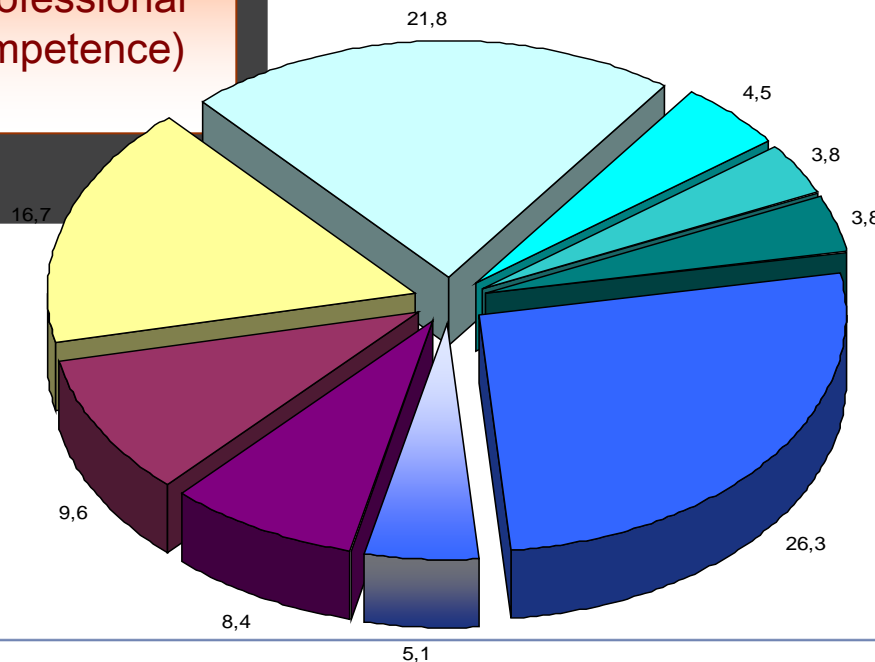
POCATOM

Human errors



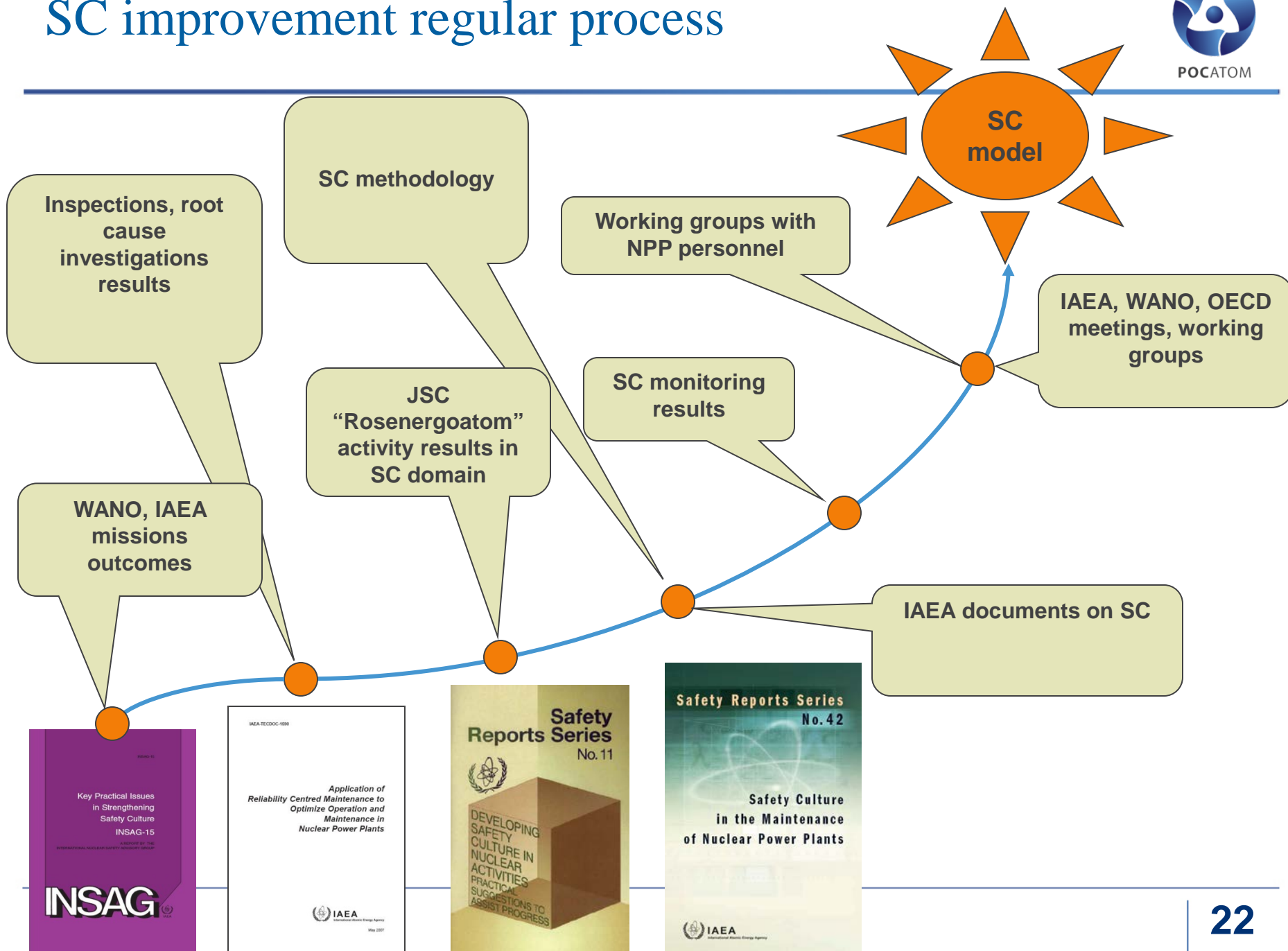
SRC "Prognoz" carries out providing and updates the database as subsystem of the corporation information system based on the results of the human errors psychological analysis and prepares analytical reports for managers and Inspection division of JSC "Concern Rosenergoatom".

Human factor specialist take part in root cause analysis team and used method "Psychological root cause analysis of wrong performance".



SC improvement regular process

SC improvement regular process



SC improvement regular process



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Developing SC model, tools to improve you should use IAEA recommendations, take into account features of national culture, national production relations





Strategy level

JSC “Rosenergoatom” policy and strategy in SC improvement

Organization Ethic Code

Administrative level

SC enhancement process regulation

Regulation on SC summarized day

Regulation on SC group activity

Regulation on SC monitoring

Regulation on interaction with methodological support organization



Tools:

SC self-assessment method

SC self-assessment guide

SC self-assessment software

SC forming and development method for both an individual and organizational level

Corporate knowledge portal on SC

Administrative level

Actions on SC enhancement regular process introduction

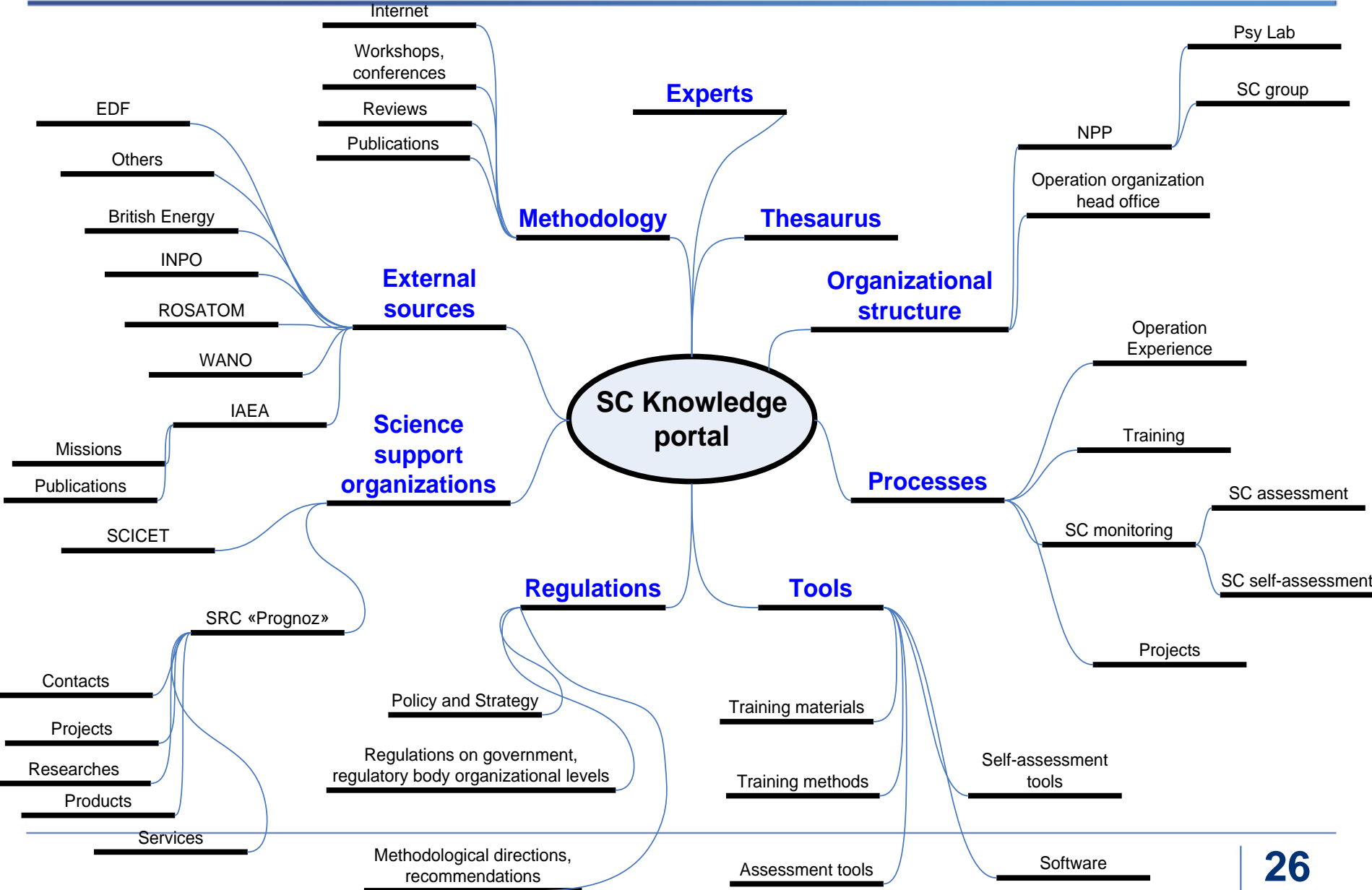
Operational level

Regular SC improvement process



POCATOM

Corporate knowledge portal on Safety Culture



Principle 3: Leadership and management for safety

3.12. "...Safety has to be achieved and maintained by means of an effective management system. This system has to **integrate all elements** of management so that requirements for safety are established and applied coherently with other requirements, including those for human performance, quality and security, an that **safety is not compromised by other requirement or demands**. The management system also **has to ensure the promotion of a strong safety culture...**"

IAEA Safety Standards

for protecting people and the environment

Fundamental Safety Principles

Jointly sponsored by
Euratom FAO IAEA ILO IMO OECD/NEA PAHO UNEP WHO



Safety Fundamentals

No. SF-1

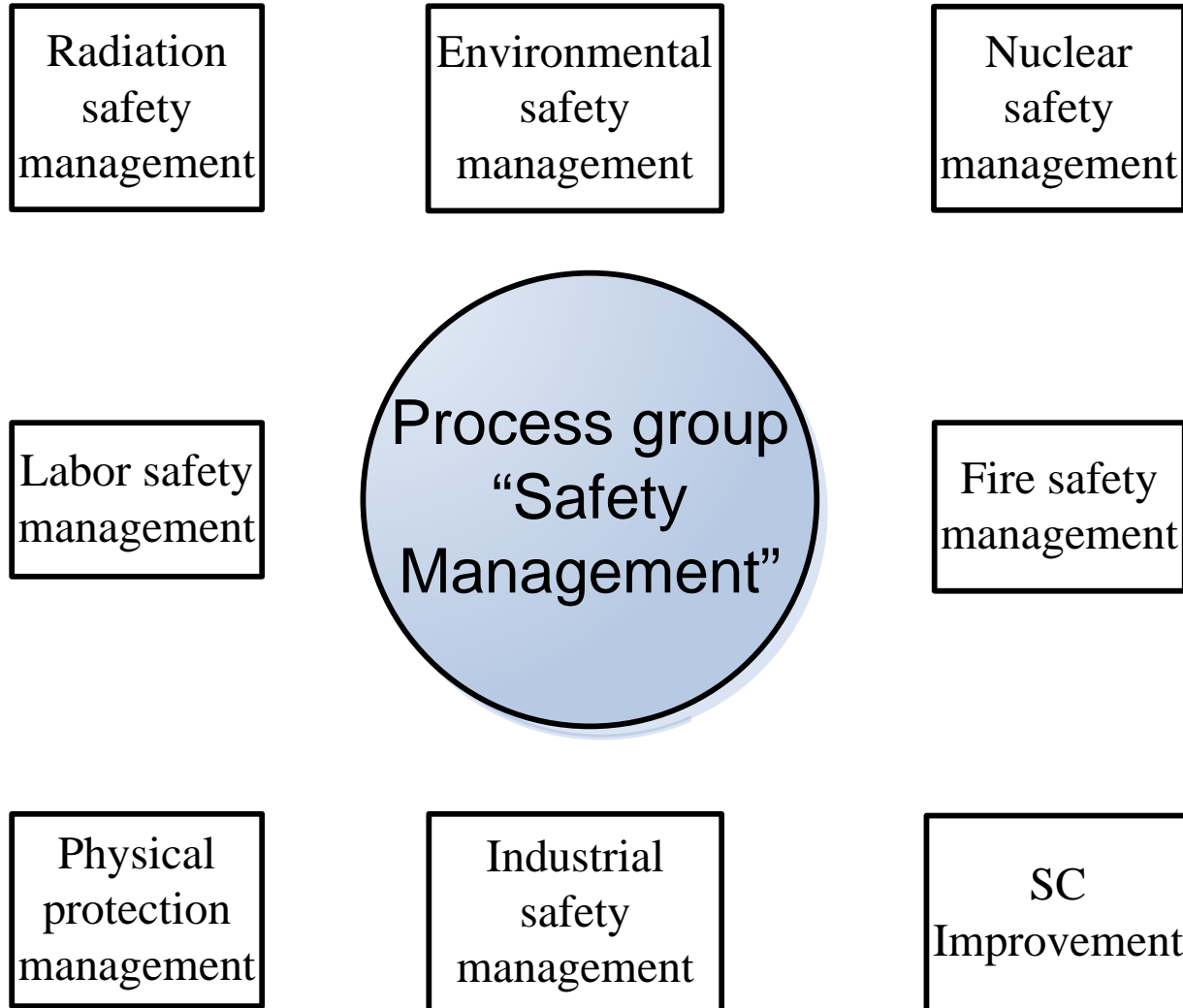


3.13. "A safety culture that governs the attitudes and behaviour in relation to safety of all organizations and individuals concerned must be integrated in the management system.

SC Integration in Rosatom management system



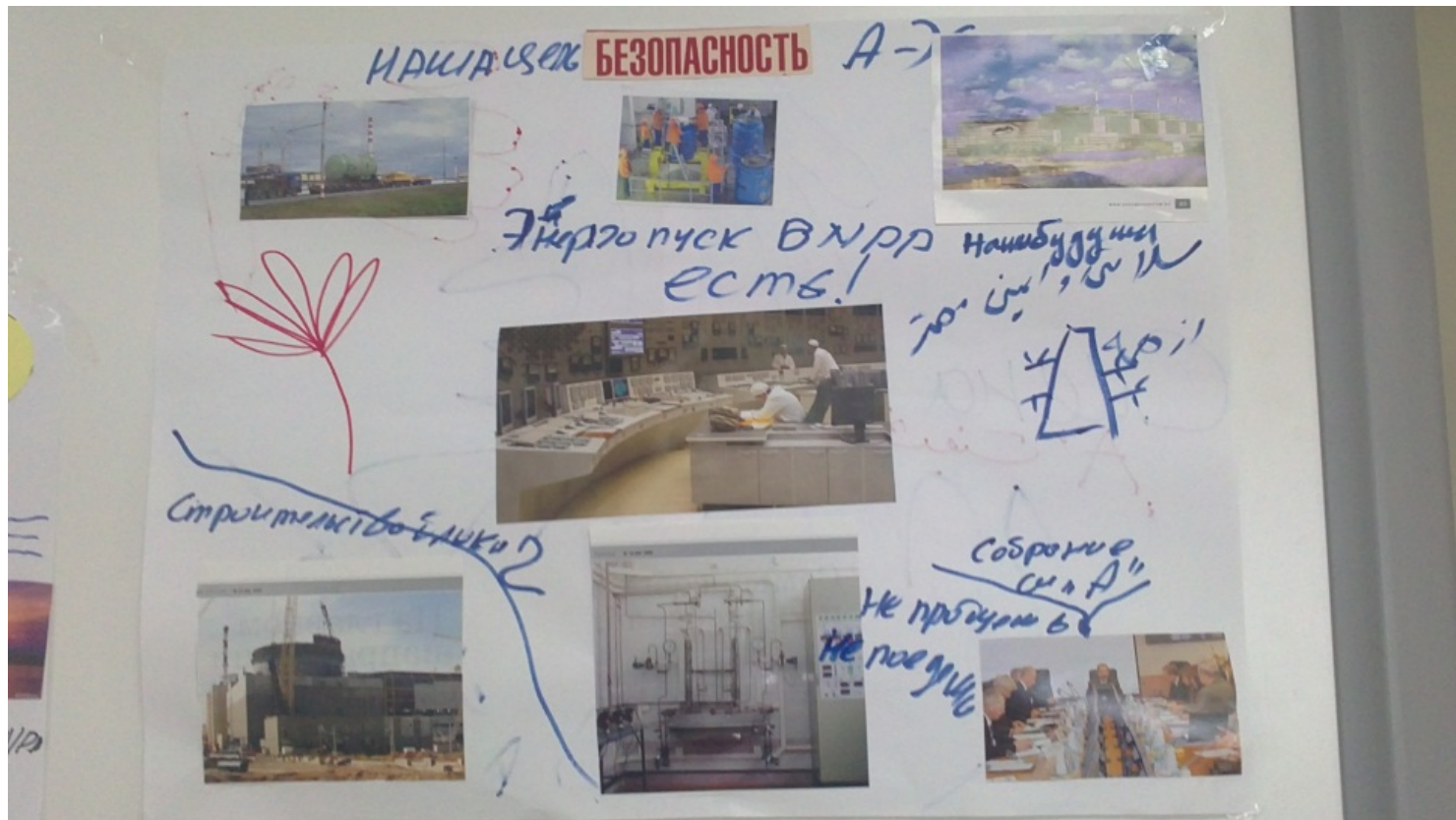
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Two cultures meeting on a field of nuclear energy use

Two cultures meeting: Buser NPP

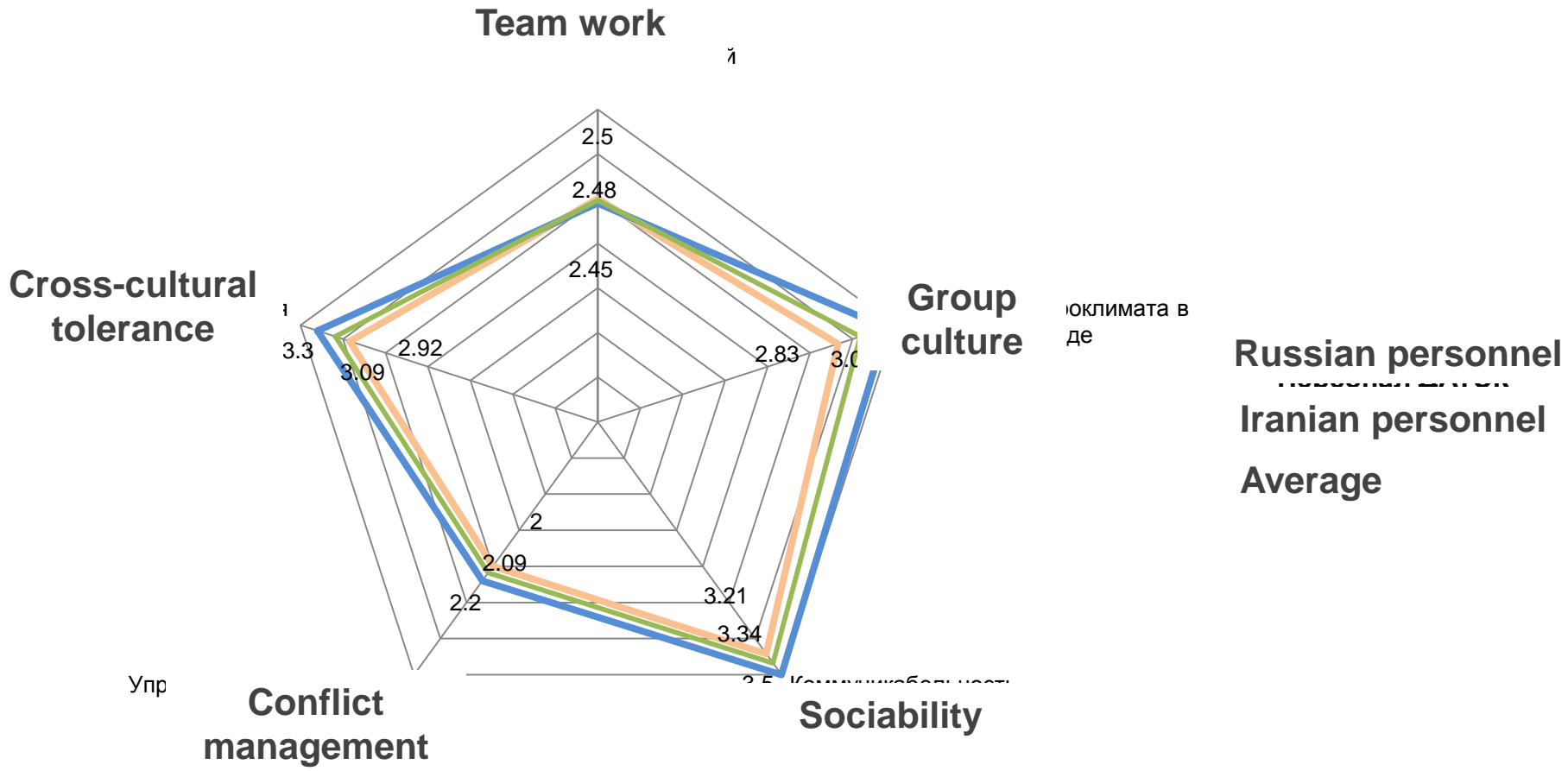
Stage 1. Health Check. Group interaction assessment process



Stage 1. Health Check. Results of the group interaction assessment



POCATOM



From top management appeal:

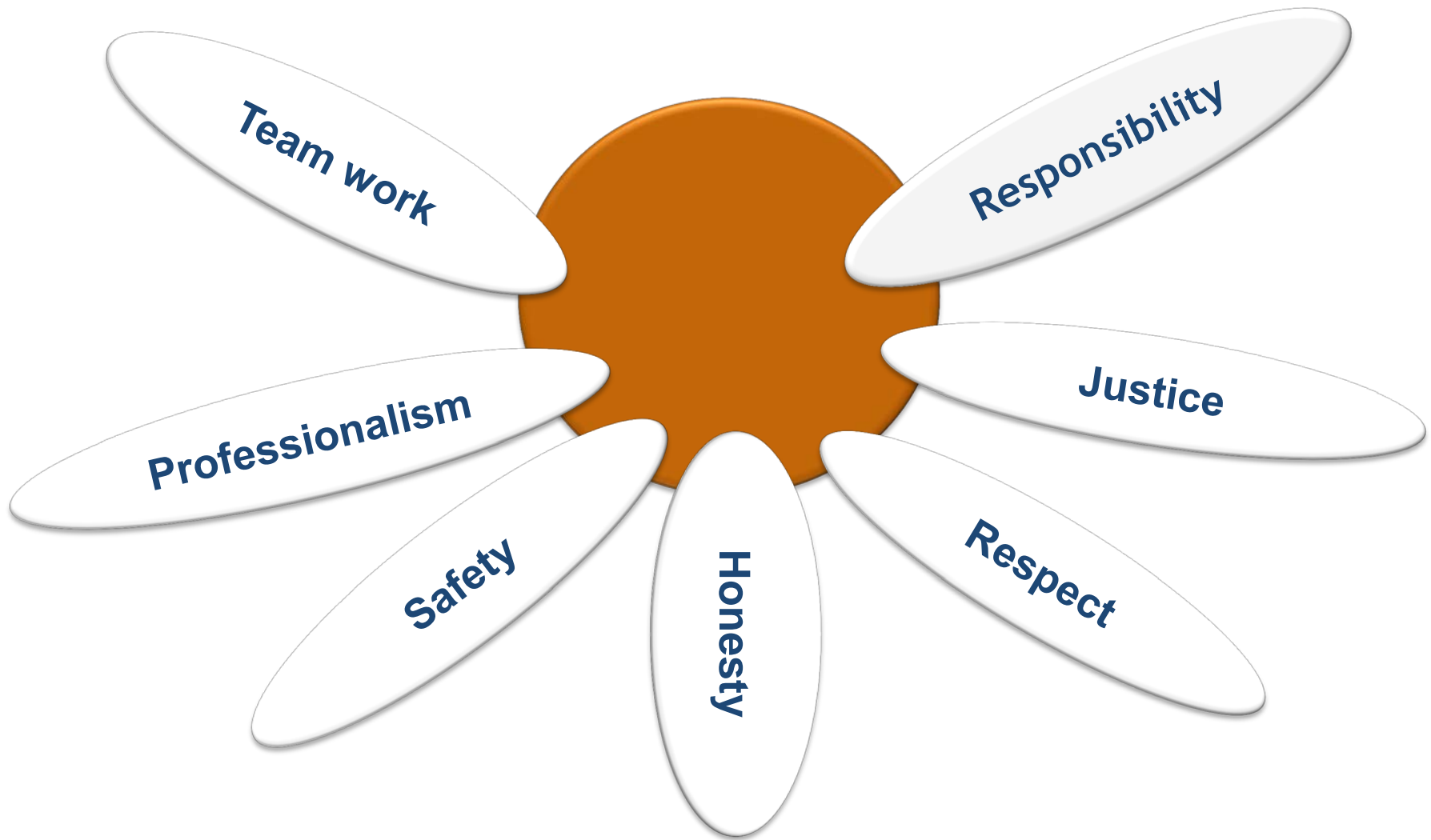
The Code defines united ethics values and behavior standards for Buser NPP workers which provide the NPP safety and efficiency.

If we will follow these standards we will reach high reputation and earn society's and government's respect.

The Code contains behavior standards obligatory for all Buser NPP workers



Stage 2. Ethics Code: Basic values for Busher NPP personnel





Stage 3. Training of cross-cultural interaction

The training is addressed to the Russian and foreign managers and specialists who take part in nuclear facilities construction and operation

and

has a goal to harmonize cross-cultural contacts on both intergroup and interpersonal levels, to prevent conflicts by means of cross-cultural tolerance forming.

Stage 3. Training of cross-cultural interaction

MAIN TASKS:

- to decrease level of preconception to other ethnic group representatives;
- to develop ethno-cultural sensitiveness;
- to enhance level of ethno-cultural competence;
- to enhance level of empathy;
- to enhance positiveness level of ethnic and other kinds of social identity;
- to develop readiness to interact with people from another ethnic group in various social situations.



1. **SC concept and improvement must be integrated in all stages of nuclear facility life cycle**
2. **Developing SC model, tools to improve you should use IAEA recommendations, take into account features of national culture, national production relations**
3. **Take into account not only human being values and behavior, but organizational ones.**
4. **Support organizational processes with knowledge about human factor**
5. **Leadership – main factor of success in SC improvement**
6. **Use of human factor specialists (psychologists) makes human factor reliability support more effective.**
7. **Use special tools to train adult people**
8. **SC: manage, not operate**
9. **SC: continuing improvement is in focus, not an appraisal**
10. **Have a patience – culture is a long term changing phenomenon**

2nd International Summer School on Safety Culture

Russian Federation, Saint-Petersburg, 1 - 5 July 2013



More Information: www.scicet.ru



Thank you
for
the attention!