Canadian Institute for Neutron Scattering

Minutes of the Annual General Meeting

October 25-26, 2013, McMaster University

The Annual General Meeting of the Canadian Institute for Neutron Scattering is open to all CINS members, guests, and interested persons. In attendance at the 2013 meeting were the executive of CINS: Dominic Ryan (President), Chris Wiebe (Vice-President), Carl Adams (Treasurer), Thad Harroun (Secretary), and John Root (Membership Secretary), in addition to a quorum of the trustees and a quorum of the general membership, including professors and students.

§ 1. Friday, October 25th, 2013

The 2013 CINS AGM was convened at 5:15pm by Dominic Ryan. Opening remarks were made by Bruce Gaulin, and welcoming remarks were made by guest Fiona McNeill, Associate Vice-President of Research at McMaster University.

The keynote speaker of the evening was Mark Lumsden, Oak Ridge National Lab, who spoke on ineleastic neutron scattering at the SNS.

§ 2. Saturday, October 26th, 2013

The tentative agenda for the day (found in Appendix A) was heavily modified to accommodate the necessary business of the day. In the subsequent sections are the minutes of the day as it unfolded.

§ 3. CINS Business I

The day began with an open business meeting convened at 09:00am, by Dominic.

A. President's Report: D. Ryan

A.1. CINS formal engagement with AECL executive.

The first item to report was CINS' trip in April to Ottawa to engage AECL on working constructively with respect to AECL restructuring. Attending for CINS was Dominic, Maikel Rheinstadter, Chris Wiebe, David Shoesmith, Thad Harroun, and Warren Poole.

The meeting resulted in some concrete actions for CNBC staff and tentative plans for CINS representatives to follow up with later. However, the plans unravelled during the summer, in large part it

seems, from indecision within AECL on the best way to proceed with the universities. AECL needs to first decide on their plans, thus we must wait before more action can be taken.

A question was raised about who was representing AECL at this meeting; was it the right people? John Root replied that it was the VP, Research and Development and the GM, Research and Development Operations, but notably not the CEO. The target outcome our potential cooperation with AECL was, and remains, unclear.

A.2. CINS re-constitution.

There are recent legislation changes to the Canada Not-for-profit Corporations Act, and all federally incorporated not-for-profit entities are required to transition to the new rules in the structure of their organization. This involves submitting new letters patent and by-laws. to the federal government. For CINS, Daniel Banks has been working very hard to construct a possible new structure for CINS.

The choice before the membership is between two options for how CINS can be strucutred under the new Act. Daniel will provide details in his presentation (below), but they are:

- Minimal change to the current structure of trustees from member institutions. (More detail below on the specific changes.)
- Split up the functions of the current executive. This involves establishing a new Board of Directors, and a new Science council. Documents regarding how this might work have been available on the CINS AGM meeting website for awhile, and a email was sent to all members prior to the AGM inviting them to read and make comments. (See appendix 1.)

There are some advantages for the second choice. It might be possible to fill the Board with distinguished, industry-experienced, arms-length, serious people that can gain the confidence of government and other granting agencies. Thus CINS might be able to receive and administer monies for projects related to AECL restructuring plans, or in a best case scenario, administration of neutron science operational grants at a new Chalk River labs (CRL). Such a board might be characterized as disinterested executive managerial champions of the neutron science cause.

Dominic handed over to John Root to report on the status of the Canadian Neutron Beam Centre (CNBC) and Daniel on the details of the proposed governance changes.

B. CNBC report: J. Root

Slides of John's report can be found in Appendix B

Questions asked during the presentation:

- What is the current income of Mo-99 contributing to the NRU operational costs? About $30M of the $100M.
- What is the expected timeline for transition of Chalk River labs to government-owned, contractor-operated (go-co) structure? This decision awaits the announcement of the government's nuclear

mandate, which will determine what the go-co will look like. Expect at least two years for a detailed government agenda, then the extended process of a request for bids.

- How is staffing levels at the CNBC? No new positions can be opened, except for postdocs.

C. CINS proposed by-laws: D. Banks, D. Ryan

Documents of the new by-laws can be found in Appendix C, and at `http://cins.ca/about.html`

One of the main changes to the Not-for-profit Corporations Act is that organizations cannot have appointed or ex-officio governing boards. Governing boards must be elected from the membership. When considering last year's discussion of CINS strengthening its international credibility, this suggests CINS might be able to position itself to handle larger quantities of money, i.e. to conduct the science functions of CRL.

The new structure for the governing board is such that dues-paying institutional members provide representatives, who elect directors to the board at a meeting of institutional members, prior to the annual general meeting of the individual members. The Board of Directors will have three members (to start) and the President of the Science Council, and conduct the general management and direction CINS. Individual members will then elect five representatives to a Science Council, to carry out the scientific and educational mandates of CINS. The President is the liaison between the Science Council and the Board of Directors.

In response to questions, several points of discussion were opened.

- The initial selection process (should the membership agree to adopt this new structure) would be to elect a new Science Council during the AGM. A new Board of Directors would also be selected initially from our institutional membership, with the understanding that they are temporary until key people for the position are identified and recruited. This initial Board will receive directions from CINS members and work to reconstitute themselves in the manner envisioned to raise the reputation of CINS.
- CINS has currently 14 institutional members, who will meet via teleconference at lunchtime.
- The Board and Council duties are very flexible and responsibilities can be assigned as the membership sees fit. The President of Council as a Board member connect the two.
- As for practical management of CINS, the Board will need to appoint a Secretary and Treasurer.
- Dominic emphasizes that a Board with management experience, if not neutron experience, is set to quickly adapt to long term positive changes, such a conducting a NRU replacement engineering case study. If those changes don't materialize, we can back down from a managerial focused Board to a more scientific oriented one, and continue on as CINS has in the past.

After discussion on the proposed changes ended, motion was proposed and carried to adopt the new articles of continuance, bylaws, and operating policies.

C.1. Direction of new Governing Board: D. Ryan

Following the vote to adopt the new governing structure of CINS, there was discussion of setting the direction of the new Governing Board. Starting with friends of CINS, the recruitment of prominent and credible people will commence. The mechanism of Board renewal is that the members serve staggered 3 year terms. The next order of business is to decide on a initial high quality Board.

The direction of the Board is to capitalize on opportunities when the government's nuclear agenda is revealed, working to replace NRU with a new neutron source. The Board will work to position CINS "on the rising slope of potential changes", and present our our inputs into the use of neutrons, but that requires funding to plan properly.

A question was asked if CINS could get the whole reactor mandate, beyond the neutron science instruments? Dominic suggested that if not the reactor mandate, at least the first suite of instruments.

John Root reports that feedback from some parts of government indicated that no strong voice spoke out for neutron science during the reorganization consultation process, while we know that CINS made a submission, and there were other contributions from academia at that time. This perception may be because of lack of presence and profile with CINS, and that can be corrected. The new Board can be up to 11 members, and the three as outlined in the documents represent the founding board size, which could stay on through the process.

Motion: D. Ryan. Members direct the initial board of directors to establish a high profile board of directors that can credibly manage funding for neutron scattering in Canada. Seconded by C. Wiebe.
Vote: Unanimously carried, without abstentions.

Business section adjourned at 10:30

§ 4. Plenary Talk: B. Gualin

Bruce Gaulin gave a talk on the SANS for nano-structured materials at beam port 4 at the McMaster Nuclear Reactor (MNR): "MacSANS". MNR operation is currently 5 days a week, 40 weeks per year. If MacSANS can perform $\sim$40 experiments a year in steady state, it could lead to 20 papers a year. Christopher Heysel, Director of MNR operations was on hand to answer questions.

§ 5. Trustee Meeting

Trustees meet in-camera during the lunch break.

§ 6. Plenary Talk: Egor Sanin

Egor Sanin, of the International Centre for Technology Transfer, presented a talk on Canada-Russia cooperation in science and technology. One area of potential collaboration is through the Petersburg Nuclear Physics Institute (PNPI). Egor shared with us the exciting future plans for neutron scattering at the PNPI PIK reactor in Gatchina, Russia. Slides from his talk can be found in Appendix D.

§ 7. Science Talks

Students Laura Toppozini, Alannah Hallas, and Jerod Wagman, all of McMaster University gave a variety of talks on their research.

§ 8. CINS Business II

The second part of the open business meeting called to order by Carl Adams at 3:56pm.

A. Student poster award

Congratulations to Kemp Plumb for best poster presented at the 2013 CINS AGM.

B. Trustees meeting report

The initial slate of candidates for the new Board of Directors were announced. The initial Board of Directors for CINS shall be; John Root (2 year term), Bruce Gaulin (3 year term), Dean Chapman (1 year term).

The initial nominees for Science Council were put forward by the outgoing Trustees; Zahra Yamani. (1 year term), Maikel Rheinstadter. (1 year term), Thad Harroun. (2 year term), Harlyn Silverstein. (2 year term, Student/Postdoc representative).

Dominic Ryan is nominated for Science Council President.

Motion: C. Adams Without any additional nominations, all the candidates were unanimously acclaimed to their positions.

C. Final business:D. Ryan

C.1. Next year's AGM

The location of next year's AGM was discussed. StFX was suggested, but it was thought that student participation might be low. Ontario is considered the best location for students. Young-June Kim volunteers to meet at University of Toronto, while Carl Adams will explore other east coast options.

C.2. Thanks to hosts

Dominic extends thanks to Maikel Rhainstadter, Fei-Chi Yang, Bruce Gaulin, and Debra Farquhar for their organization of this year's meeting.

Meeting was adjourned 4:08pm

§ A. Appendix A

Published tentative agenda for the 2013 CINS AGM.

McMaster University
Inspiring Innovation and Discovery

CANADIAN INSTITUTE FOR NEUTRON SCATTERING

CINS 2013 Annual General Meeting

October 25 & 26, 2013

McMaster University, MDCL Room 1016

Tentative CINS AGM 2013 AGENDA

Friday, Oct. 25, 2013

4:00 p.m. Registration and Reception

4:30 p.m. Tour of the McMaster Nuclear Reactor

Conference Opening Session

5:15 p.m. **Opening Remarks and Welcome:** VP Research (McMaster University), Prof. Dominic Ryan (CINS), Prof. Bruce Gaulin (BIMR)

5:30 p.m. **Keynote Speaker:**
Mark Lumsden (Oak Ridge National Lab)

6:45 p.m. Dinner at the Phoenix, McMaster Campus

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Tentative CINS AGM 2013 AGENDA

Saturday, Oct. 26, 2013

8:00 a.m.	Coffee
8:30 a.m.	Program Reopens/ Poster Setup
9:00 a.m.	Discussion of Mission for Meeting (Dominic Ryan)
9:30 a.m.	**Science Talks:** Laura Toppozini, McMaster University Alannah Hallas, McMaster University Jerod Wagman, McMaster University
10:30 a.m.	Coffee Break and Poster Session
11:30 a.m.	MACSANS: The new Small Angle Instrument at the McMaster Nuclear Reactor
12:00 p.m.	Lunch – MDCL 1016 - All meeting attendees (CINS Trustees Lunch Meeting in Parallel)
1:00 p.m.	**Mr. Egor Sanin:** University of Windsor, Development Officer, Institute for Diagnostic Imaging Research, Research Facilities in Russia
1:30 p.m.	**CINS Business:** 1. President's Report (Dr. Dominic Ryan) 2. Elections 3. Bylaw changes 4. Any other business
2:30	**Dr. John Root:** CNBC (environment of NRC, AECL, the MOU, Future for neutron scattering in Canada, Q&A)
3:30 p.m.	Coffee Break
3:45 p.m.	Presentation of Best Student Awards
4:00 p.m.	Remaining CINS Business
5:30 p.m.	Dinner, Westdale Village

§ B. Appendix B

Slides from John Root's presentation.

CNBC Situation and Forecast

John Root

Canadian Institute for Neutron Scattering – Annual General Meeting at McMaster University

26 October 2013

www.neutrons.ca

Situation as of Last AGM

The issues seemed to be:

1. AECL restructuring: "CANDU Energy" detached from AECL
   AECL to be Canada's nuclear S&T organization

2. NRU licensed to operate to 2016, with a decision planned in mid-2014 about renewal of the license to 2016-2021.

3. Loss of funding for CNBC via McGill from NSERC MRS program:
   $1.3M → $0.5M → 0 in FY 2013-2014 .

4. NRC re-direction towards industry-led R&D.

How the Situation Changed

1. AECL, the remaining nuclear S&T organization, received GoC direction:

Confirmed mandates

(a) Managing radioactive waste and decommissioning responsibilities
(b) Providing technology and services to the Federal government
(c) Supporting the S&T needs of the nuclear industry

+ Mandate under consideration (decision ~ 2014 - 2015)

(d) Supporting a cost-shared, industry-led nuclear innovation agenda
(might include neutron-scattering)
(linked to investment in a replacement for NRU)

2. NRC planned to divest responsibility for operating CNBC by March 2013.

3. Federal department NRCan, AECL and NRC reached an agreement…

NRC – AECL Agreement

March 6, 2013

"… Effective 2013 April 01, the NRC and AECL have agreed to transfer the operation and governance of the CNBC to AECL for a period of two years. This action is the result of two factors: a decision taken by the NRC to no longer fund the CNBC as part of recent initiatives to refocus on targeted market-driven research and development, and, agreement by AECL to retain the unique capabilities associated with the CNBC while the Federal Government assesses the opportunities for a forward-looking industry-driven nuclear innovation agenda.

During this two-year period, NRC staff of the CNBC will continue to be employees of the NRC while working in alignment with AECL priorities. The CNBC will report into AECL's R&D organization through Rick Didsbury, General Manager, Research & Development Operations…"

Bill Kupferschmidt
AECL Vice-President,
Research & Development

Situation as of Today

1. AECL has stepped up to maintain CNBC competencies and capacity

    a) Covering baseline cost previously covered by NRC + NSERC (MRS)
    b) Setting income targets (industry service, other third parties)
    c) Welcoming user access via peer-review, free of direct charge
    d) Demonstrating to what extent neutron-scattering and a research reactor are valuable assets for a nuclear innovation agenda
    e) Evaluating future operation “cost-shared, industry-led, innovation…”

2. NRU licensed to operate to 2016, upgrading to operate beyond 2016.

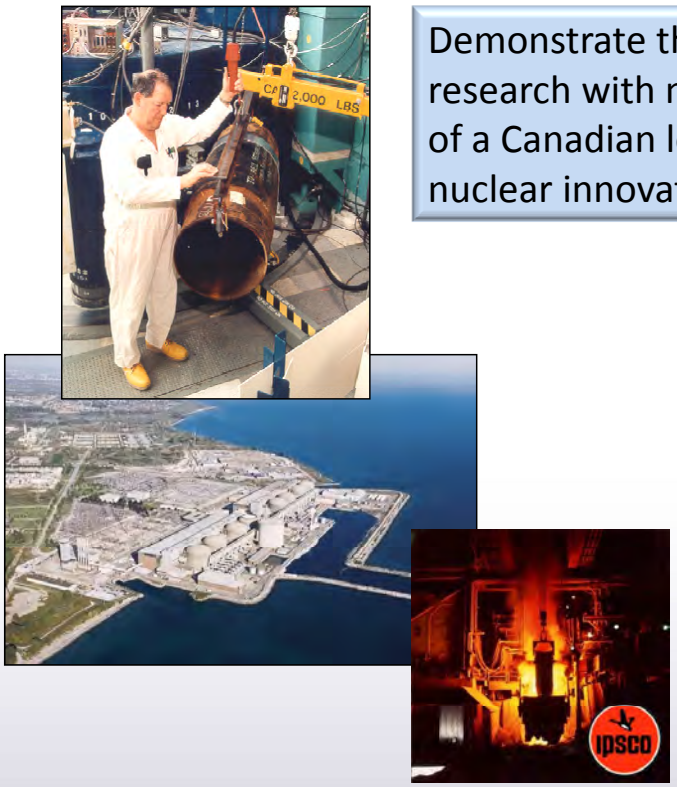
    a) Expecting a decision in 2014 whether or not to re-license 2016-2021.
    b) Expecting loss of income when Mo-99 production ends in 2016.
    c) Exploring how to increase income to offset cost of operating NRU.

Aligning CNBC Value Proposition

The Canadian Neutron Beam Centre (CNBC) enables hundreds of clients, from industry and academia, to apply uniquely powerful neutron instruments and methods to advance their programs of materials research and development.

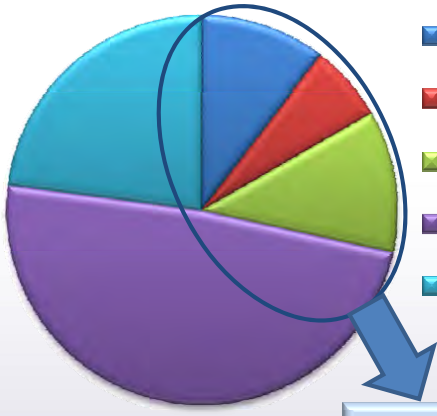
The specialized facilities and expertise of the CNBC support business innovation and serve as resources for Canadians to train and work at the leading edge of science and technology.

CNBC Key Goal 2013-2015



Demonstrate that a national competency for materials research with neutron beams would be an essential part of a Canadian long-term, industry-driven, cost-shared nuclear innovation agenda.

Historic industry access



Target Outreach to non-nuclear sectors

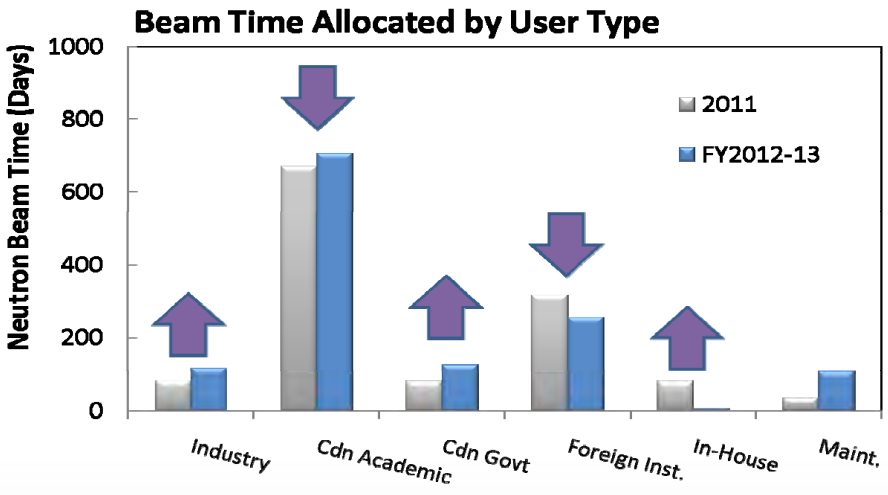
Investing in future of neutron scattering

Biennial international neutron-scattering summer school:
2013 June 3-7, Chalk River Laboratories

Outreach to non-nuclear industry

When	Conference	Target Sector
Apr 15 ✓	Soc. of Automotive Engineers Congress (Detroit)	Automotive
May 28 ✓	Workshop on Pipeline Welding (U of Alberta)	Oil & Gas
Jun 11 ✓	Annual meeting of Magnesium Network (UBC)	Light metals for Automotive
July 14 ✓	Pressure Vessel and Piping (Paris)	Oil & Gas, Nuclear
Sep 27 ✓	Workshop on Neutron Scattering Methods (CanmetMATERIALS – Hamilton)	Materials production, Automotive
Oct 2 ✓	Canadian Inst of Steel Construction (Laval)	Steel manufacturing
Oct 7 ✓	Residual Stress Summit (Idaho Falls)	All sectors
Oct 28	Conference of Metallurgists / MetSoc Neutron Symposium (Montreal)	Oil & Gas, Materials
Oct 29	Canadian Welding Association (Niagara Falls)	Oil & Gas

Foreseeable trend in client distribution



- Today, CNBC neutron beam facilities are operated 24/7 at full capacity.
- To increase industry access, we must decrease public-domain access.
- It is our priority to find ways to deliver value to non-nuclear industry sectors, e.g. oil & gas.

By reaching beyond the nuclear industry, the CNBC brings a perspective on "nuclear innovation" as the application of nuclear facilities, methods and expertise to support business innovation, enabling Canadians to train and work at the leading edge of science and technology.

Performance Indicators (Sept 25, 2013)

Performance Indicator	Value Demonstrated	YTD Actual	YTD Target	Target FYE 2014
Percentage of beam time for user or client-driven projects.	*CNBC facilities are mainly devoted to support S&T programs of users / clients*	81%	90%	90%
Percentage of beam time for fee-for-service projects.	*CNBC resources are needed by industry.*	2.0%	10%	10%
Fee-for-service revenue from non-AECL clients	*Neutron-beam measurements are valued by industry.*	$40K	$200K	$400K
Number of CNBC-AECL collaborative research projects.	*AECL program activities demonstrate value of neutron scattering and NRU.*	5	2.5	5
Number of users of all sectors (industry in brackets)	*Many individual researchers, from industry, gov't and academia need access to CNBC facilities*	98(4)	100(12)	200 (25)
Number of companies accessing CNBC facilities	*Companies need access to neutron beam facilities for both public-domain and proprietary R&D.*	3	12	25

Publications and reports by calendar year (S&T Contributions)		YTD Actual	YTD Target	Target 2013
Number of peer-reviewed publications and (Number of proprietary reports)	CNBC researchers make high-quality contributions to public and private S&T	34 (6)	33 (3)	45 (5)

Neutron Facility "trade-balance"

In 2012, the CNBC had 91 **Research Participants*** from the USA.

Meanwhile, USA neutron facilities reported:

- NIST – 86 Canadian Research Participants
- SNS – 16 participants from Canadian institutions
- HFIR – 4 participants from Canadian institutions
- LANSCE – 6 Canadian visitors + others from Canadian institutions

* You were counted as a Research Participant in 2012 if:

- you visited for an experiment; or
- an experiment you proposed was given beam time; or
- you published a paper arising from your past experiment.

Operational Issues (Oct 1, 2013)

CNBC needs a research reactor and working environment that is:

- **SAFE** (Industrial hazards)
- **CLEAN** (Radiological hazards)
- **RELIABLE** (To schedule ~100 visiting researchers and students per year from across Canada and abroad to 24/7 operation)
- **COMPETITIVE** (vs ~20 other neutron beam facilities worldwide)

CNBC holds monthly meetings with NRU senior management to address issues:

- ***Defining a working zone with reduced hazards (i.e. reduced PPE)***
- *Flux delivery to neutron beams (10-25% losses cf 2008)*
- *Need to inspect, maintain C2 through-tube and gate*
- ✓ *Mis-communication of operations affecting CNBC equipment (process water, electrical…)*

Key Messages

- There is a process now underway to make a decision about federal government investment in “nuclear innovation”.
- A positive decision is necessary (but not sufficient) for federal investment in neutron scattering and a new neutron source.
- CINS can work with / through AECL to support the federal decision-making process.

§ C. Appendix C

The new CINS by-laws and operating policies as decided by the membership. Copies of these documents, as well as federal form 4031, Articles of Continuance, can be found at `http://cins.ca/about.html`. (This PDF form would not keep the filled-in information to attach to the meeting minutes.)

A by-law relating generally to the conduct
of the affairs of the

Canadian Institute of Neutron Scattering

Institut canadien de la diffusion des neutrons

(the "Corporation")

Adopted October 26, 2013

BE IT ENACTED as a by-law of the Corporation as follows:

Interpretation

1. Definition

In this by-law and all other by-laws of the Corporation, unless the context otherwise requires:

"**Act**" means the *Canada Not-For-Profit Corporations Act* S.C. 2009, c. 23 including the Regulations made pursuant to the Act, and any statute or regulations that may be substituted, as amended from time to time;

"**articles**" means the original or restated articles of incorporation or articles of amendment, amalgamation, continuance, reorganization, arrangement or revival of the Corporation;

"**board**" means the board of directors of the Corporation and "**director**" means a member of the board;

"**by-law**" means this by-law and any other by-law of the Corporation as amended and which are, from time to time, in force and effect;

"**meeting of members**" includes an annual meeting of members or a special meeting of members; "**special meeting of members**" includes a meeting of any class or classes of members and a special meeting of all members entitled to vote at an annual meeting of members;

"**ordinary resolution**" means a resolution passed by a majority of more than 50% of the votes cast on that resolution;

"**proposal**" means a proposal submitted by a member of the Corporation that meets the requirements of section 163 (Shareholder Proposals) of the Act;

"**Regulations**" means the regulations made under the Act, as amended, restated or in effect from time to time; and

"**special resolution**" means a resolution passed by a majority of not less than two-thirds (2/3) of the votes cast on that resolution.

2. Interpretation

In the interpretation of this by-law, words in the singular include the plural and vice-versa, words in one gender include all genders, and "person" includes an individual, body corporate, partnership, trust and unincorporated organization.

Other than as specified above, words and expressions defined in the Act have the same meanings when used in these by-laws.

3. Parliamentary Authority

Except as specified in the Act, the articles, the bylaws or policies of the Corporation, the rules contained in the current edition of *The Standard Code of Parliamentary Procedure (Sturgis)*, latest revision, shall govern all the meetings of the Corporation.

4. New or Amended By-laws and Effective Date

Subject to the articles, the board of directors may, by resolution, make, amend or repeal any by-laws that regulate the activities or affairs of the Corporation. Any such by-law, amendment or repeal shall be effective from the date of the resolution of directors until the next meeting of institutional members where it may be confirmed, rejected or amended by the members by ordinary resolution. If the by-law, amendment or repeal is confirmed or confirmed as amended by the members it remains effective in the form in which it was confirmed. The by-law, amendment or repeal ceases to have effect if it is not submitted to the members at the next meeting of institutional members or if it is rejected by the members at the meeting. If a by-law, amendment or repeal ceases to have effect, a subsequent resolution of the directors that has substantially the same purpose or effect is not effective until it is confirmed, or confirmed as amended, by the members.

This section does not apply to a by-law that requires a special resolution of the members according to subsection 197(1) (fundamental change) of the Act because such by-law amendments or repeals are only effective when confirmed by members.

Membership

5. Membership Conditions

Subject to the articles, there shall be two classes of members in the Corporation, namely, institutional members and individual members. The board of directors of the Corporation may, by resolution, approve the admission of the members of the Corporation. Members may also be admitted in such other manner as may be prescribed by the board by resolution. The following conditions of membership shall apply:

Institutional Members

a. Institutional membership shall be available to any Canadian academic, government or industrial or non-profit institution which has staff members who are actively involved or intend to become involved in research using neutron

beams, and which has applied and has been accepted for institutional membership in the Corporation.

b. The term of membership of an institutional member and renewal thereof shall be set out in the policies of the Corporation. The membership fee for institutional members shall be set by the board of directors.

c. As set out in the articles, each institutional member is entitled to receive notice of, attend and vote at all meetings of the institutional members of the Corporation and each such institutional member shall be entitled to one (1) vote at such meetings.

Individual Members

d. Individual membership shall be available to any individual and who has applied and has been accepted for individual membership in the Corporation and who is either based at a Canadian institution and has an active interest in research using neutron beams, or is based a foreign institution and conducts research at a Canadian neutron beam facility.

e. The term of membership of individual members and renewal thereof shall be set out in the policies of the Corporation. The membership fee for individual members, if any, must be ratified by a vote of the individual members.

f. Each individual member is entitled to receive notice of, attend and vote at all meetings of the individual members of the Corporation and each such individual member shall be entitled to one (1) vote at such meetings.

g. Except as otherwise provided by the Canada Not-for-Profit Corporations Act, S.C. 2009, c.23, an individual member shall not be entitled to receive notice of, attend or vote at meetings of the institutional members of the Corporation.

Pursuant to subsection 197(1) (Fundamental Change) of the Act, a special resolution of the members is required to make any amendments to this section of the by-laws if those amendments affect membership rights and/or conditions described in paragraph 197(1).

6. Termination of Membership

A membership in the Corporation is terminated when:

a. the member dies, or, in the case of a member that is a corporation, the corporation is dissolved;
b. a member fails to maintain any qualifications for membership described in the section on membership conditions of these by-laws;
c. a member fails to pay any applicable dues within a period of time as prescribed by the policies of the Corporation;
d. the member resigns by delivering a written resignation to the chair of the board of the Corporation in which case such resignation shall be effective on the date specified in the resignation;

e. the member is expelled in accordance with any discipline of members section or is otherwise terminated in accordance with the articles or by-laws;
f. the member's term of membership expires; or
g. the Corporation is liquidated or dissolved under the Act.

7. Effect of Termination of Membership

Subject to the articles, upon any termination of membership, the rights of the member, including any rights in the property of the Corporation, automatically cease to exist.

8. Discipline of Members

The board shall have authority to suspend or expel any member from the Corporation for any one or more of the following grounds:

a. violating any provision of the articles, by-laws, or written policies of the Corporation;
b. carrying out any conduct which may be detrimental to the Corporation as determined by the board in its sole discretion;
c. for any other reason that the board in its sole and absolute discretion considers to be reasonable, having regard to the purpose of the Corporation.

In the event that the board determines that a member should be expelled or suspended from membership in the Corporation, the president, or such other officer as may be designated by the board, shall provide twenty (20) days notice of suspension or expulsion to the member and shall provide reasons for the proposed suspension or expulsion. The member may make written submissions to the president, or such other officer as may be designated by the board, in response to the notice received within such twenty (20) day period. In the event that no written submissions are received by the president, the president, or such other officer as may be designated by the board, may proceed to notify the member that the member is suspended or expelled from membership in the Corporation. If written submissions are received in accordance with this section, the board will consider such submissions in arriving at a final decision and shall notify the member concerning such final decision within a further twenty (20) days from the date of receipt of the submissions. The board's decision shall be final and binding on the member, without any further right of appeal.

Individual Members' Meetings

9. Individual Members' Meetings

The provisions in this by-law with respect to the calling of, notice to be given, absentee voting in, place of, and electronic means of general or special meetings of institutional members apply to general or special meetings of individual members *mutatis mutandis*.

10. Quorum at Individual Members' Meetings

A quorum at any meeting of the members (unless a greater number of members are required to be present by the Act) shall be 15 of the individual members entitled to vote at the meeting. The members present may not proceed with the business of the meeting if a quorum is not present throughout the meeting.

Science Council

11. Science Council

There shall be a science council of the Corporation (hereafter called “the council”), elected by the individual members. The composition, manner of election, meetings, and other matters with respect to the structure and operation of the council shall be set out in the policies of the Corporation.

12. Duties and Powers of the Science Council

The council shall establish the scientific policies and procedures of the corporation, shall supervise the scientific activities of the corporation and shall allocate the funds of the Corporation provided by the board of directors for these purposes.

The council shall advise the board of directors to apply from time to time on behalf of the corporation for grants of funds for the support of research using neutron beams.

The council may also exercise any discretion which may be given to the corporation by the grantor and the board of directors as to the allocation and expenditure of grant funds for research using neutron beams.

The council shall also coordinate the activities of the individual members of the Corporation with respect to promoting research using neutron beams.

The board of directors may refuse to approve or follow any action of council.

Institutional Members’ Meetings

13. Place of Institutional Members' Meeting

Subject to compliance with section 159 (Place of Members' Meetings) of the Act, meetings of the institutional members may be held at any place within Canada determined by the board or, if all of the members entitled to vote at such meeting so agree, outside Canada.

14. Notice of Institutional Members’ Meeting

Notice of the time and place of a meeting of institutional members shall be given to each member entitled to vote at the meeting by telephonic, electronic or other communication facility, during a period of 21 to 35 days before the day on which the meeting is to be held. If a member requests that the notice be given by non-electronic means, the notice will be sent by mail, courier or personal delivery.

Pursuant to subsection 197(1) (Fundamental Change) of the Act, a special resolution of the members is required to make any amendment to the by-laws of the Corporation to change the manner of giving notice to members entitled to vote at a meeting of members.

15. Members Calling an Institutional Members' Meeting

The board of directors shall call a special meeting of institutional members in accordance with Section 167 of the Act, on written requisition of 5% of the institutional members. If the directors do not call a meeting within twenty-one (21) days of receiving the requisition, any member who signed the requisition may call the meeting.

16. Quorum at Institutional Members' Meetings

A quorum at any meeting of the institutional members (unless a greater number of members are required to be present by the Act) shall be 40% of the members entitled to vote at the meeting. The members present may not proceed with the business of the meeting if a quorum is not present throughout the meeting.

17. Participation by Electronic Means at Institutional Members' Meetings

If the Corporation chooses to make available a telephonic, electronic or other communication facility that permits all participants to communicate adequately with each other during a meeting of institutional members, any person entitled to attend such meeting may participate in the meeting by means of such telephonic, electronic or other communication facility in the manner provided by the Act. A person participating in a meeting by such means is deemed to be present at the meeting. Notwithstanding any other provision of this by-law, any person participating in a meeting of members pursuant to this section who is entitled to vote at that meeting may vote, in accordance with the Act, by means of any telephonic, electronic or other communication facility that the Corporation has made available for that purpose.

18. Institutional Members' Meeting Held Entirely by Electronic Means

If the directors or members of the Corporation call a meeting of members pursuant to the Act, those directors or members, as the case may be, may determine that the meeting shall be held, in accordance with the Act and the Regulations, entirely by means of a telephonic, electronic or other communication facility that permits all participants to communicate adequately with each other during the meeting.

Board of Directors

19. Election of Directors

One director (hereafter called the “President”) shall be elected for a two-year term at the annual meeting of the individual members, or at a special meeting of the

individual members called for this purpose. By virtue of election to the board of directors, the President shall also be Chair of the Science Council and be responsible for the duties of the President as prescribed in the policies of the corporation.

Other directors (hereafter called “institutional directors”) shall be elected at the annual meeting of the institutional members, or at a special meeting of the institutional members called for election of directors.

20. Number and Term of Office of Directors

The board shall be comprised of the President plus a fixed number of institutional directors as determined from time to time by the institutional members by ordinary resolution. The minimum number of directors may not be fewer than three (3), at least two of whom are not officers or employees of the Corporation or its affiliates.

At the first election of institutional directors following the approval of this by-law, one shall be elected for a three-year term, one shall be elected for a two-year term and one shall be elected for a one-year term. Thereafter, except where an election is held to fill the unexpired portion of a term, newly elected directors shall be elected for three-year (3) terms.

Whenever the number of institutional directors is changed by the institutional members as set out above, the institutional members shall, by ordinary resolution, fix the length of the terms of office for any new directors for not more than three (3) years and may reduce the term of office of any incumbent director as needed to achieve staggered terms in which approximately one-third (1/3) of the terms expire each year.

As specified in the articles, the directors may appoint one or more directors, who shall hold office for a term expiring not later than the close of the next annual general meeting of institutional members, but the total number of directors so appointed may not exceed one-third (1/3) of the number of directors elected by the members.

21. Calling of Meetings of Board of Directors

Meetings of the board may be called by the chair of the board, the vice-chair of the board or any two (2) directors at any time.

22. Notice of Meeting of Board of Directors

Notice of the time and place for the holding of a meeting of the board shall be given in the manner provided in the section on giving notice of meeting of directors of this by-law to every director of the Corporation not less than 5 days before the time when the meeting is to be held. Notice of a meeting shall not be necessary if all of the directors are present, and none objects to the holding of the meeting, or if those absent have waived notice of or have otherwise signified their consent to the holding of such meeting. Notice of an adjourned meeting is not required if the time and place of the adjourned meeting is announced at the original meeting. Unless the by-law otherwise provides, no notice of meeting need specify the purpose or the business to be transacted at the meeting except that a notice of meeting of directors

shall specify any matter referred to in subsection 138(2) (Limits on Authority) of the Act that is to be dealt with at the meeting.

23. Regular Meetings of the Board of Directors

The board may appoint a day or days in any month or months for regular meetings of the board at a place and hour to be named. A copy of any resolution of the board fixing the place and time of such regular meetings of the board shall be sent to each director forthwith after being passed, but no other notice shall be required for any such regular meeting except if subsection 136(3) (Notice of Meeting) of the Act requires the purpose thereof or the business to be transacted to be specified in the notice.

Officers

24. Appointment of Officers

The board may designate the offices of the Corporation, appoint officers on an annual or more frequent basis, specify their duties and, subject to the Act, delegate to such officers the power to manage the affairs of the Corporation. A director may be appointed to any office of the Corporation. An officer may, but need not be, a director unless these by-laws otherwise provide. Two or more offices may be held by the same person.

Conflict of Interest

25. Conflict of Interest for Directors and Officers

Every Director and Officer shall disclose to the Corporation the nature and extent of any interest that the Director or Officer has in a material contract or material transaction, whether made or proposed, with the Corporation, in accordance with the manner and timing provided in section 141 of the Act.

Financial Matters

26. Execution of Documents

Deeds, transfers, assignments, contracts, obligations and other instruments in writing requiring execution by the Corporation may be signed by any two (2) persons authorized by the board to be signing officers. The board may from time to time direct the manner in which and the person or persons by whom a particular document or type of document shall be executed. Any signing officer may certify a copy of any instrument, resolution, by-law or other document of the Corporation to be a true copy thereof.

27. Banking Arrangements

The banking business of the Corporation shall be transacted at such bank, trust company or other firm or corporation carrying on a banking business in Canada or elsewhere as the board of directors may designate, appoint or authorize from time to time by resolution. The banking business or any part of it shall be transacted by an officer or officers of the Corporation and/or other persons as the board of directors may by resolution from time to time designate, direct or authorize.

28. Annual Financial Statements

The Corporation may, instead of sending copies of the annual financial statements and other documents referred to in subsection 172(1) (Annual Financial Statements) of the Act to the members, publish a notice to its members stating that the annual financial statements and documents provided in subsection 172(1) are available at the registered office of the Corporation and any member may, on request, obtain a copy free of charge at the registered office or by prepaid mail.

Operating Policies of the
Canadian Institute of Neutron Scattering (CINS)

Adopted: October 26, 2013

Preamble

As of August 2013, the Canadian Institute of Neutron Scattering (CINS) is in a state of transition and uncertainty. The broad structure is fixed in the bylaws to meet requirements of Canada Not-For-Profit Corporations, while these operating policies are intended to be fluid, to allow quick adaptation to requirements of any emerging framework for funding or governance of research infrastructure that supports neutron scattering. Today, CINS is a small volunteer organization, yet it must be ready to demonstrate capacity for good governance over substantial monetary resources and facilities, should the opportunity arise.

The board of directors may establish any other procedures it deems necessary for the conduct of business inside and outside of meetings. Otherwise, the rules contained in the Parliamentary Authority shall apply (see section 3 of the bylaws).

1. Financial Year

The financial year of the Institute shall end on the last day of April in each year or on such other date as the board of directors may from time to time by resolution determine.

2. Institutional Members

a. The term of membership for institutional members shall be annual, subject to renewal upon payment of the institutional membership fee of $700 within three calendar months of the membership renewal date the members in default shall automatically cease to be members.

3. Individual Members

a. As there is no annual fee for individual members, individual members may remain members as long as they remain otherwise qualified as set out in the bylaws.
b. Applicants for beam time at a Canadian neutron beam facility may be added as members without further application, unless they specify otherwise.
c. The membership of individuals whose interest in research using neutron beams is no longer apparent and contacted by CINS, after reasonable effort, may be removed without further notice.

4. Persons Entitled to be Present at Members' Meetings

The only persons entitled to be present at a meeting of members shall be those entitled to vote at the meeting, the directors and the public accountant of the Corporation and such other persons who are entitled or required under any provision of the Canada Not-for-Profit Corporations Act, articles or by-laws of the Corporation to be present at the meeting. Any other person may be admitted only on the invitation of the chair of the meeting or by resolution of the members.

5. Institutional Members' Meetings

The annual general meeting of institutional members will be held in advance of the annual meeting of individual members for the purpose of electing directors to the board and presentation of financial statements, and appointing a public accountant.

Representatives shall be appointed by each institution to represent the institution during the members' meetings. An appointment in writing by the head of the department or faculty responsible for paying the membership fee shall be sufficient evidence of such appointment.

6. Individual Members' Meetings

The annual general meeting of individual members will be held in October or November, as determined by the council.

7. Board of Directors

a. The initial board of directors will be composed of the President and three additional members, as specified in the bylaws.
b. The board of directors shall propose a slate of candidates for any vacant board positions to be filled at the institutional members' meetings.
c. The board of directors shall consider the balance of expertise needed for good governance and may propose changes in the number of directors or may appoint a limited number of additional directors, as specified in the articles.

8. Officers appointed by and reporting to the Board of Directors

a. The board of directors shall appoint one of their number as the Chair of the board of directors. The Chair of the board shall, when present, preside at all meetings of the institutional members and of the board and shall have the general management and direction, subject to the authority of the board, of the business and affairs of the corporation, except for business and affairs subject to the authority of the Science Council as prescribed by the bylaws and these policies.
b. The board of directors shall appoint a Secretary-Treasurer who need not be a member of the board. The Secretary-Treasurer shall be the clerk responsible for:
    - creating and keeping all records pertaining to membership, meetings, finances, and other corporate business;
    - receiving and disbursing funds as authorized by the board;
    - issuing corporate notifications, including notice of meetings and member fees; and
    - reporting to the board an account of all transactions and of the financial position of the corporation as required.

The Secretary-Treasurer shall also assist the President and council as needed.

9. Science Council

a. The council shall be composed of 5 councillors, including the President, one councillor who must be either a student or post-doctoral fellow, and three other councillors.

b. As specified in the bylaws, the board member elected by the individual members shall, by virtue of the election, also be the President and Chair of the Science Council.
c. The remaining four council positions shall be elected at the annual meeting of individual members to two-year staggered terms.
d. The council shall elect a Vice-President from among the members of the council who serves at the discretion of the council.
e. In default of the election of any member of council, the then incumbent, being otherwise qualified, shall continue in office until a successor is elected.
f. In the case of a vacancy in the office of President, the Vice-President shall act as Chair of the Science Council until the position is filled by means of an election at the next annual meeting of the individual members.
g. In the case of any vacancy in the council, the council may, at its discretion, appoint persons to the council to restore the full complement of 5 members. The terms of office of any persons so appointed shall expire at the next annual meeting of the individual members.

10. Duties of the Science Council and its Members

a. As specified in the bylaws, the council shall:
   - establish the scientific policies and procedures of the corporation;
   - shall supervise the scientific activities of the corporation;
   - provide for scientific input and oversight to facilities supported by the corporation;
   - allocate the funds of the Corporation provided by the board of directors for these purposes; and
   - coordinate the activities of the individual members with respect to promoting research using neutron beams.
b. The President shall:
   - be the scientific leader and public face of the corporation;
   - preside over meetings of the council and of the individual members;
   - report to the board of directors concerning the activities of the council;
   - co-ordinate the members of council in the performance of their duties and the carrying out of all orders and resolutions of the council;
   - be responsible for submitting research grant applications;
   - be responsible for attracting institutional members and for soliciting their assistance as required; and
   - liaise with heads of other Canadian and foreign scientific societies.
c. The Vice-President shall:
   - assist the President as mutually agreed; and
   - in the absence of or inability to act of the President, exercise the powers and perform the duties of the President.
d. Other duties may be distributed among the members of council at its discretion, including, but not limited to:
   - developing scientific policies and procedures of the corporation;
   - organizing the annual general meeting of individual members;
   - solicitation and collection of member input into scientific priorities;
   - facilitating communication amongst members by electronic or other means; and
   - coordinating public and government relations activities of individual members;
e. Members of council shall perform such other duties as may from time to time be prescribed by the council.

11. Meetings of the Board of Directors, Science Council, and any committees

a. Resolutions in Writing - A resolution in writing, signed by a majority of the Directors entitled to vote on that resolution at a Board meeting, shall be as valid as if it had been passed at a Board meeting. A copy of every such resolution in writing shall be kept with the minutes.
b. Participation at Meeting by Telephone or Electronic Means - Directors may participate in a Board meeting, by means of a telephonic, electronic or other communications facility that permits all participants to communicate adequately with each other during the meeting. A Director participating in the meeting by such means shall be deemed to have been present at that meeting.
c. The same procedures for the meetings of the Board of Directors specified in (a) and (b) shall apply to meetings of the Science Council and committees *mutatis mutandis*.

12. Indemnification

The Corporation may provide present or former Directors or Officers with the indemnification described in section 151 of the Canada Not-for-Profit Corporations Act.

13. Public Accountant and Level of Financial Review

The Corporation shall be subject to the requirements relating to the appointment of a public accountant and level of financial review required by the Canada Not-for-Profit Corporations Act.

§ D. Appendix D

Slides of Egor Sanin's talk.

Reactor Complex PIK: Current state and plans

Egor Sanin

Hamilton, October 26th, 2013

Background: ICFITT

* **The mission of the International Center for Innovative Technology Transfer (ICFITT) is to identify, promote worldwide and transfer innovative technologies, form strategic partnerships for technology commercialization, and provide comprehensive service to companies, agencies and investor groups to help them achieve their global business objectives.**
* **The Center focuses on BRICS countries.**
* **ICFITT is located in Toronto, Canada, at the Canadian innovation hub, the MaRS Discovery District.**

Background: ICFITT

* One of the major objectives of the Center is to promote and foster collaboration in the areas of technology and innovation between Canada and Russia. Towards this end, a Memorandum of Collaboration has been signed between the Ministry of Economic Development of the Russian Federation and the International Center for Innovative Technology Transfer in Moscow on November 25th, 2011.

S&T Collaboration

* Canada and Russia have significant potential to collaborate in R&D as well as industrial projects in various sectors.
* This trend has been emphasized by the Joint Ministerial Statement on Co-operation in the Area of Science, Technology and Innovation, signed in Ottawa on June 2nd, 2011, by representatives of the Governments of Canada and the Russian Federation.

June 7, 2012 – Moscow, Russia - The Honourable Ed Fast, Minister of International Trade and Minister for the Asia-Pacific Gateway, meets with Arcady Dvorkovich, Deputy Prime Minister of Russia

S&T Collaboration

* Science and Technology Division of Department of Foreign Affairs, Trade and Development (DFATD) Canada has made attempts to further cooperation in "high-tech" areas
* BUT, Russia is a challenging market
* ICFITT was identified and hired as the organization that has the proper expertise to create a targeted mission to bring results

DFATD STI Mission to Russia

* The STI Mission to Russia was designed and finalized by ICFITT by working closely with DFATD, the Embassy of Canada in Russia (Moscow) and the Ministry of Economic Development of the Russian Federation
* The goal of the Mission was the identification and validation of key areas of potential collaboration among key stakeholders in Canada and Russia in the areas of:
  * nuclear medicine and isotope production
  * small reactors for autonomous operation in northern geographies and nuclear safety
  * Research and education at Petersburg Nuclear Physics Institute (PNPI)

STI Mission

* In preparation for the Mission, ICFITT identified the following organizations as key parties to be included:
  * Kurchatov Institute (Moscow)
  * Skolkovo Innovation Centre (Moscow)
  * Ministry of Economic Development of the Russian Federation (Moscow)
  * Rosatom (Moscow)
  * Petersburg Nuclear Physics Institute (St. Petersburg)
* On the Canadian side the following keys partners were selected:
  * TRIUMF (Vancouver, BC)
  * Acsion Industries (Winnipeg, MB)
  * Dunedin Energy Systems (Oshawa, ON)
  * Advanced Cyclotron Systems (Richmond, BC)

STI Mission

The program for the Mission was set for June 3-7, 2013.

The itinerary of the program was:

* June 3rd: Kurchatov Institute
* June 4th: Skolkovo, Ministry of Economic Development
* June 5th: Rosatom, Reception at Embassy of Canada
* June 6th: travel to St. Petersburg
* June 7th: Petersburg Nuclear Physics Institute

Petersburg Nuclear Physics Institute

* PNPI has become a part of the National Research Center "Kurchatov Institute"
* Stable funding for research reactor program
* Focus is on international collaboration
* Working closely with international partners to develop new research program and facility
* The model for PIK is Institut Laue-Langevin (Grenoble, France)
* When complete, PIK will inherit much of the Grenoble staff and research programs

April, 30, 2013. NRC "Kurchatov Institute" – Gatchina
Experimental Hall of the Reactor PIK

Comparison of High-Flux Neutron Research Reactors

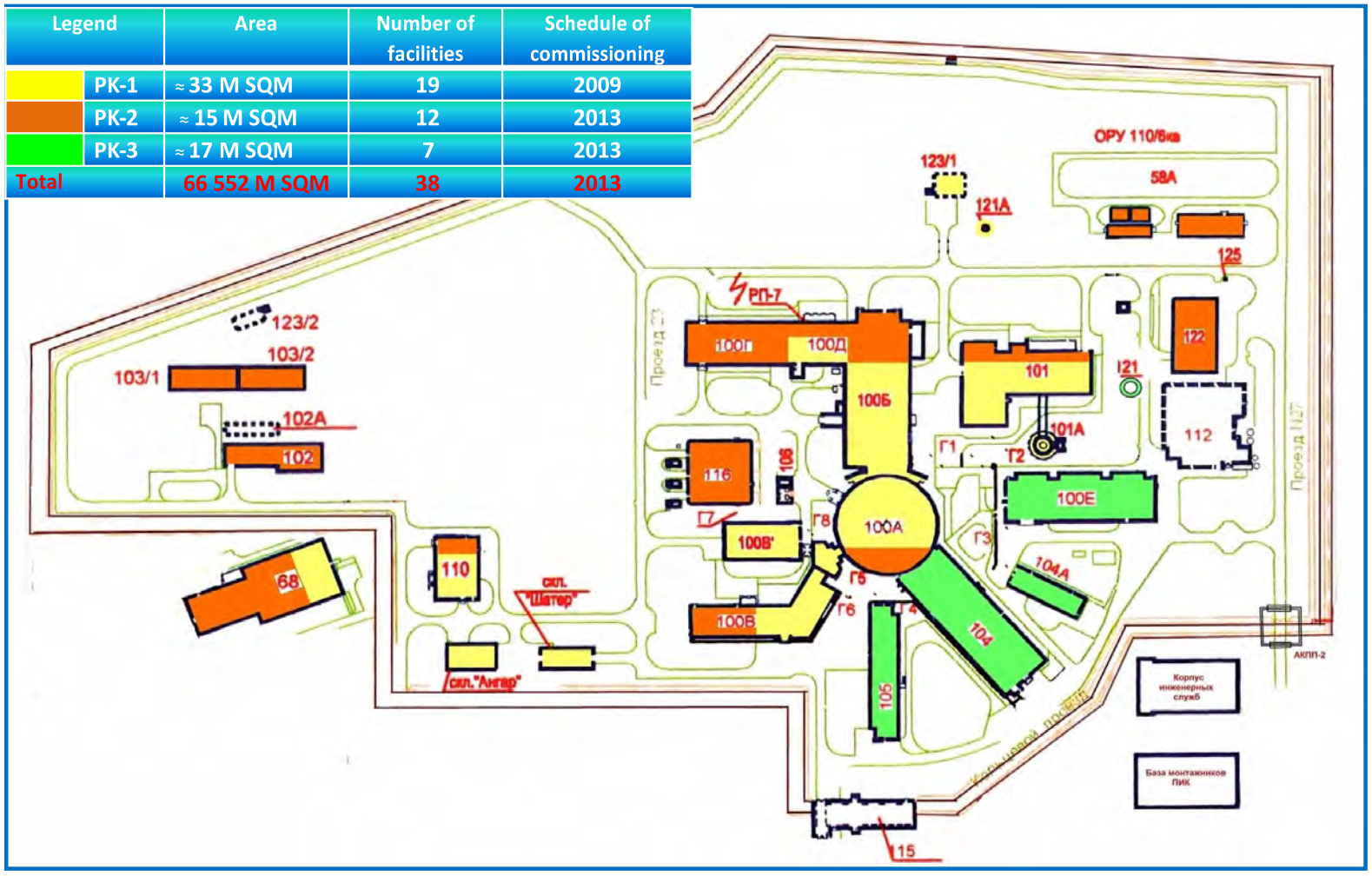
Facility/ Location	Commissioning Date	Power	Maximum Flux Density	Number of Instruments on Beams
PIK Gatchina, Russia	2019 (planned)	100 MW	**4**×**10**^{15} n/cm^{2}s	50
HFR Grenoble, France	1971	58 MW	**1.5**×**10**^{15} n/cm^{2}s	40
HFIR Oak Ridge, USA	1965 (updated 2007)	85 MW	**2.5**×**10**^{15} n/cm^{2}s	12
FRM2 Munich, Germany	2005	20 MW	**0.8**×**10**^{15} n/cm^{2}s	27
BER2 Berlin, Germany	1973	10 MW	**0.086**×**10**^{15} n/cm^{2}s	25
OPAL Sydney, Australia	2006	20 MW	**0.4**×**10**^{15} n/cm^{2}s	7
CARR Beijing, China	2010	60 MW	**0.8**×**10**^{15} n/cm^{2}s	6
WWR-M Gatchina. Russia	1959	18 MW	**0.45**×**10**^{15} n/cm^{2}s	14

National Research Center “Kurchatov Institute” - PNPI (Gatchina)

REACTOR COMPLEX PIK

LAYOUT of REACTOR COMPLEX PIK

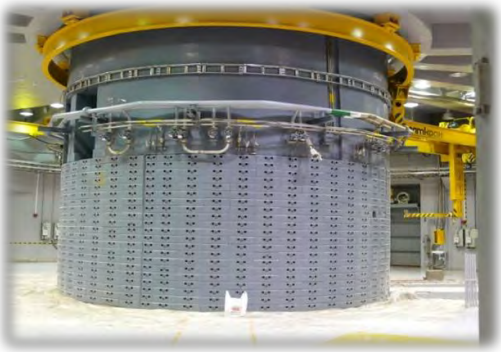
Legend	Area	Number of facilities	Schedule of commissioning
PK-1	≈ 33 M SQM	19	2009
PK-2	≈ 15 M SQM	12	2013
PK-3	≈ 17 M SQM	7	2013
Total	66 552 M SQM	38	2013



National Research Center “Kurchatov Institute” - PNPI (Gatchina)

Reactor Complex PIK

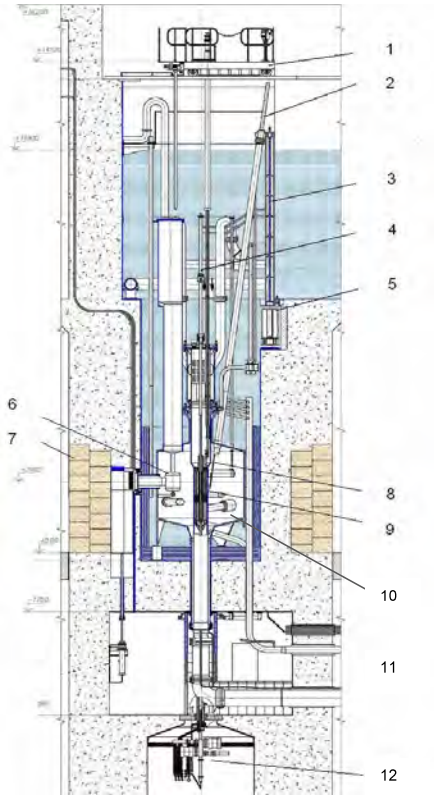
Start up complex №1.
Facilities of reactor complex PIK for the first criticality
(commissioned in 2009)



2011 a critical state of the fuel assembly was achieved and a complete test of the reactor systems was produced without coolant at W = 100 W

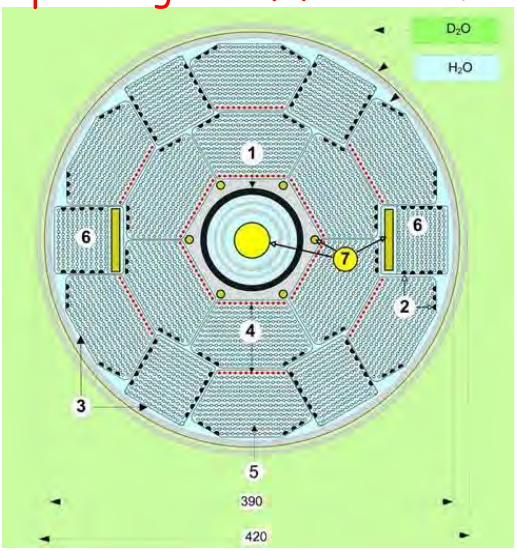
National Research Center "Kurchatov Institute" - PNPI (Gatchina)

Drawing of the PIK reactor



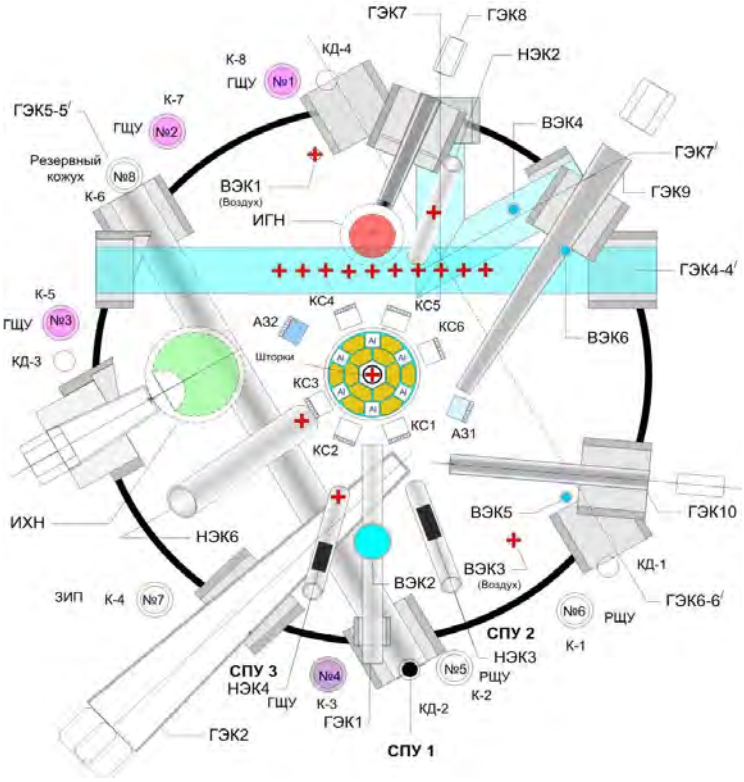
1 – reloading machine
2 – rod drive
3 – hydro seal
4 – central experimental channel
5 – reloading cylinder
6 - cold neutron source
7 – dismountable shielding
8 – absorber rod
9 – reactor vessel with the core
10 – heavy watre reflector
11 – horizontal experimental channel
12 - shutters drive

The core of the PIK reactor (with operating set of fuel assemblies)



1- Hf absorbing shutters
2 – burnable absorber rods $Gd_2O_3 + ZrO_2$
3 – Zr fuel assembly cover;
4 – fuel elements with reduced fuel contents (0,48 of nominal content)
5 – fuel elements with nominal fuel contents
6 – fuel assemblies with witness-specimen of vessel material
7 – irradiated samples

Placement of the experimental channels and detectors of the regular and additional equipment of control system during first criticality



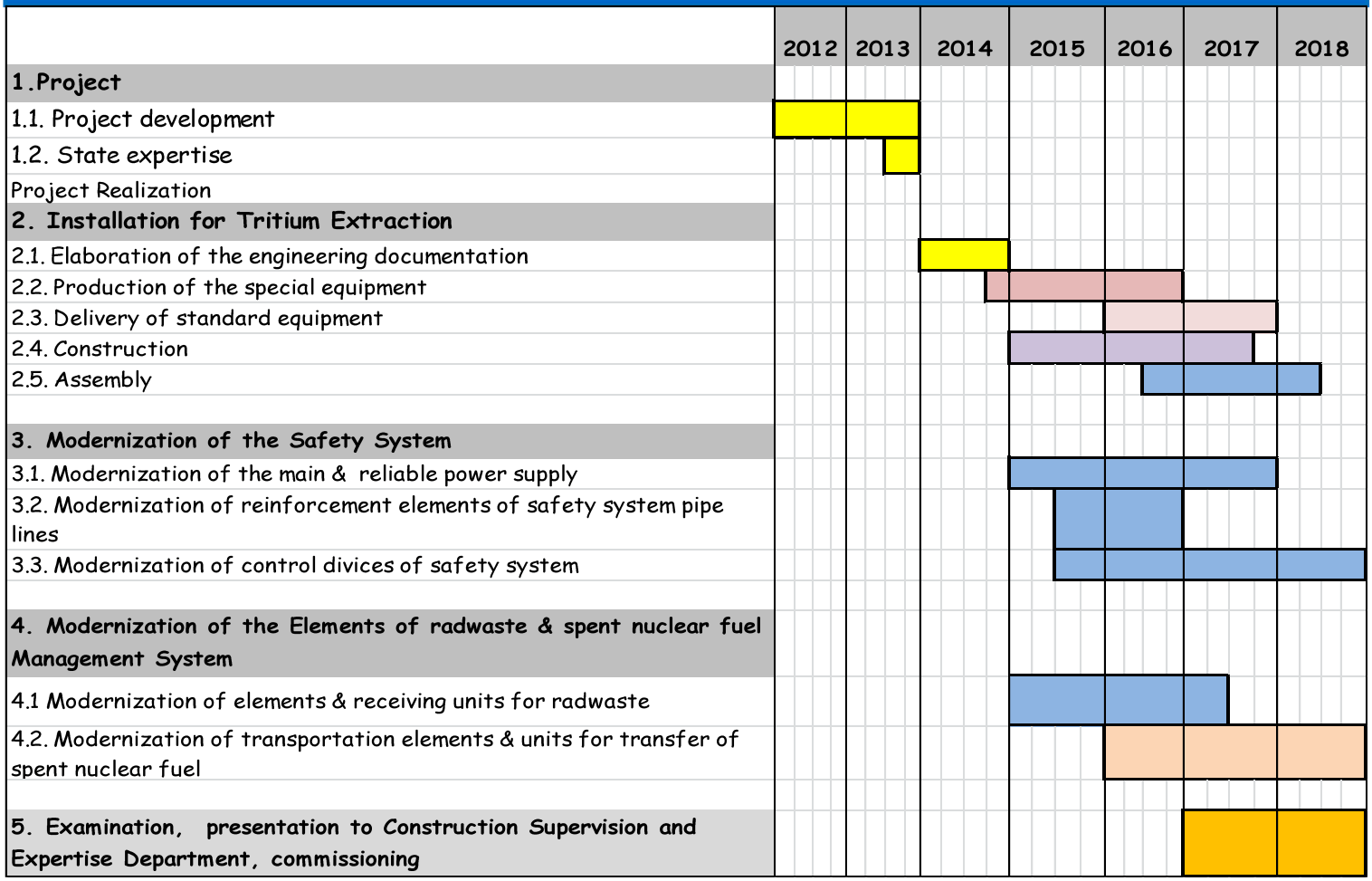
The main detectors ASUZ-03R:
channels K-1÷K-8 with the lead protection. In the drawing are marked 4 main used channels of control system ASUZ-03R No. (1÷4).

Neutron source: Central experimental channel

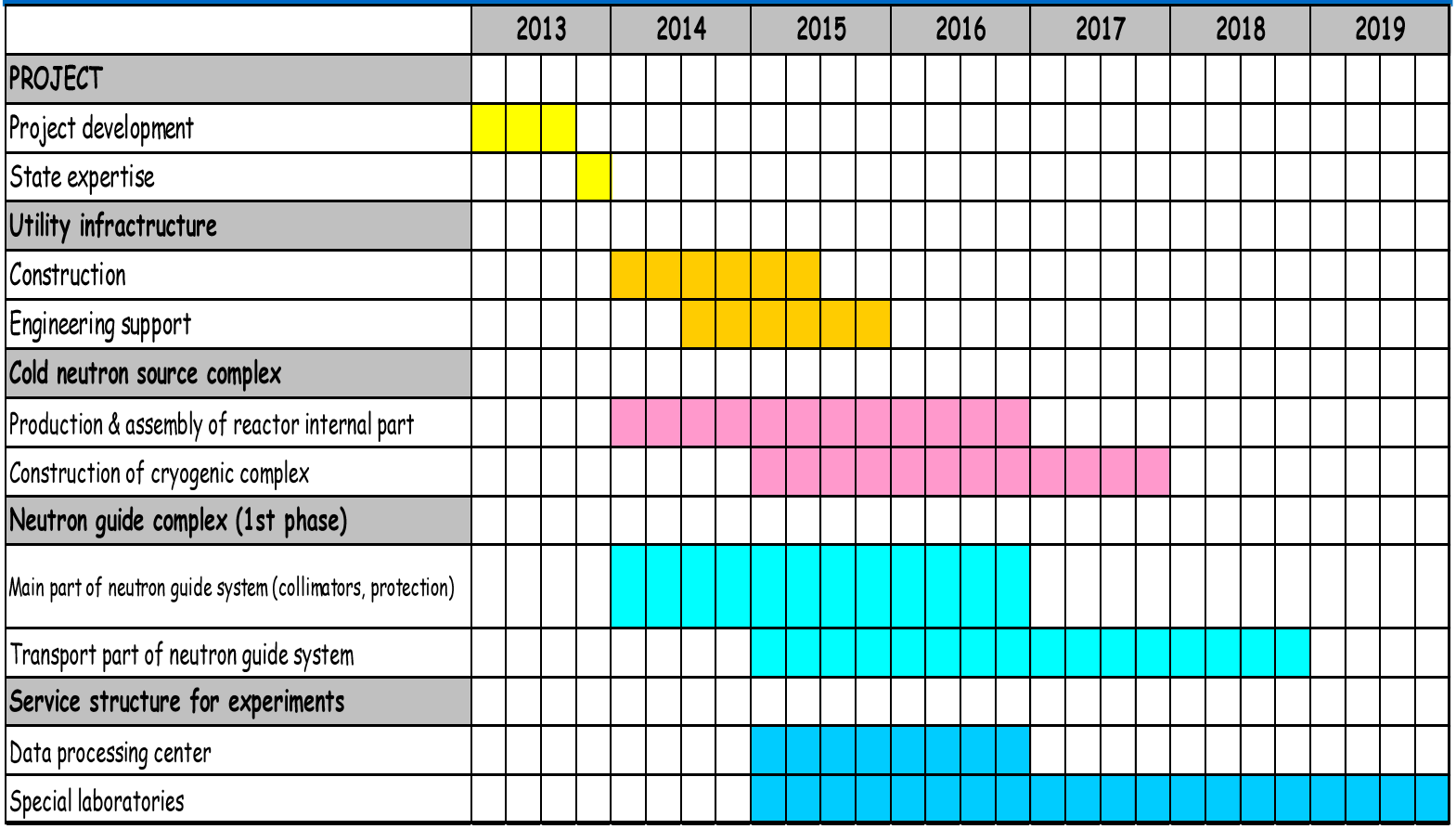
Detectors of additional equipment:
Calculational launch installation CLI 1-1MM :
No. 1 in the detector channel -2 iron-water protection tank or iron-water protection tank
No. 2 in the channel inclined experimental channel 2
No. 3 in the inclined experimental channel 4 or inclined experimental channel 6.

Neutron activating detectors:
central experimental channel (Au – 11 pcs, In – 2 pcs, Ni – 1 pc.)
horizontal experimental channel 4-4 (Au –10 pcs., 2 pcs.)
vertical experimental channel 1 (Au – 5 pcs.),
vertical experimental channel 3 (Au – 5 pcs.)
inclined experimental channel 2 (Au – 1 pc.)
inclined experimental channel 4 (Au – 1 pc.)
inclined experimental channel 6 (Au – 1 pc., In – 1 pc.)
marked with red cross.

Schedule of the Modernization PIK Engineering Infrastructure



Schedule of the Reconstruction of Laboratory Complex PIK



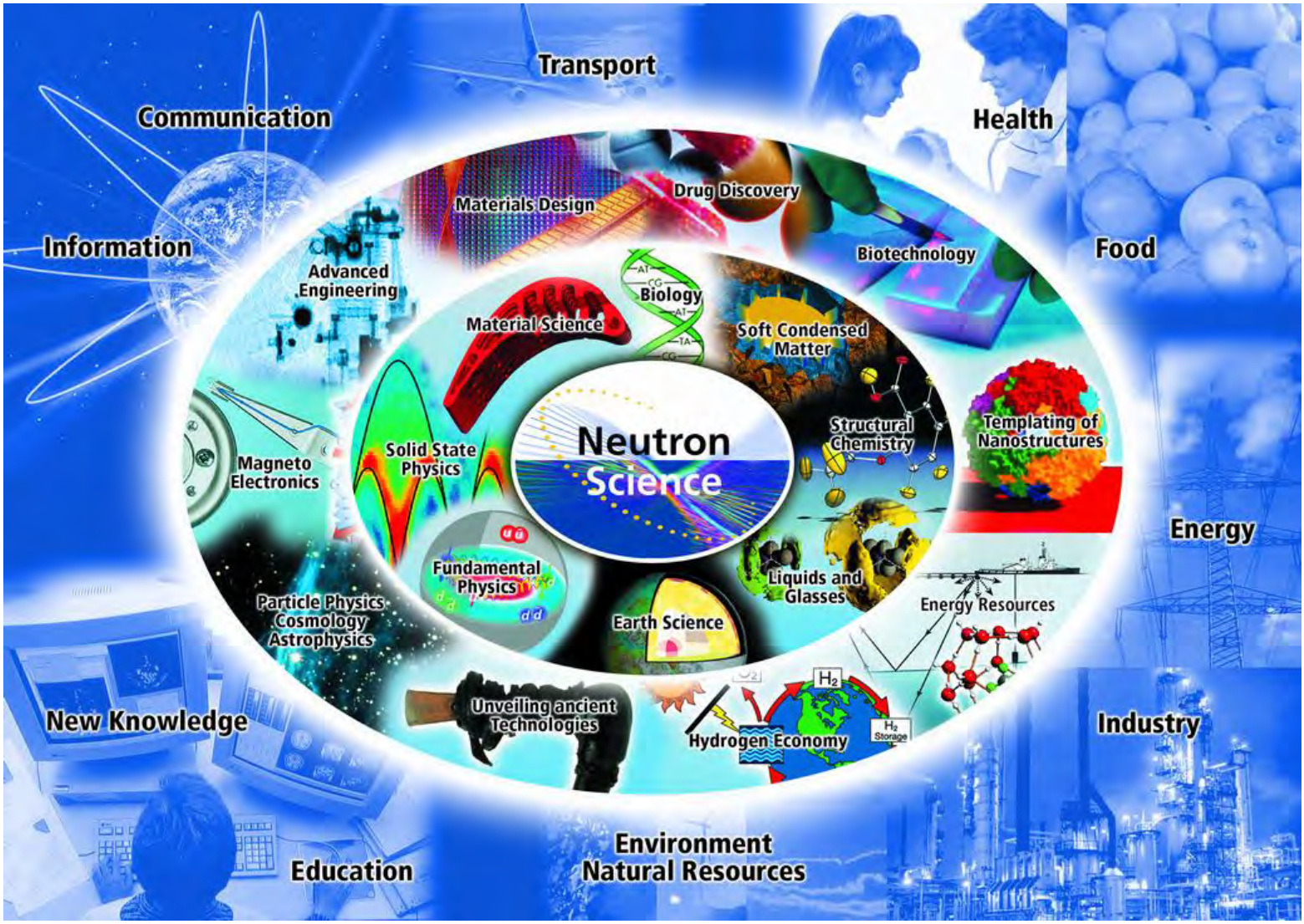
National Research Center "Kurchatov Institute" - PNPI (Gatchina)

Schedule of Experimental Stations Construction

	2014	2015	2016	2017	2018	2019	2020
PROJECT							
Development of the project							
State expertise							
Neutron sources							
Replacement of reactor channels cryogenic systems of additional CNS, UCNS, LTHL, engineering system of hot neutron sources, commissioning of additional CNS & UCNS)							
Experimental stations							
Nuclear physics & elementary particle physics, 1st phase (3 instruments)							
Nuclear physics & elementary particle physics, 2nd phase (7 instruments)							
Condensed-matter physics, 1st phase (9 instruments)							
Condensed-matter physics, 2nd phase (13 instruments)							
Molecular-biology center							
Laboratories & infractructure for molecular-biology							

INTERNATIONAL CENTER

FOR NEUTRON RESEARCH


Transport
Communication
Health
Information
Food
Energy
New Knowledge
Industry
Education
Environment
Natural Resources
Materials Design
Drug Discovery
Biotechnology
Advanced Engineering
Biology
Material Science
Soft Condensed Matter
Templating of Nanostructures
Structural Chemistry
Magneto Electronics
Solid State Physics
Neutron Science
Fundamental Physics
Liquids and Glasses
Energy Resources
Particle Physics
Cosmology
Astrophysics
Earth Science
Unveiling ancient Technologies
Hydrogen Economy
H2
H2 Storage

National Research Center “Kurchatov Institute” - PNPI (Gatchina)

Experimental Stations from GKSS (Hamburg) for Reactor PIK

http://lns.pnpi.spb.ru/pnpi-gkss/

April, 30, 2013. NRC "Kurchatov Institute" – Gatchina
V.V. Putin with H. Dosh and S. Schmidt

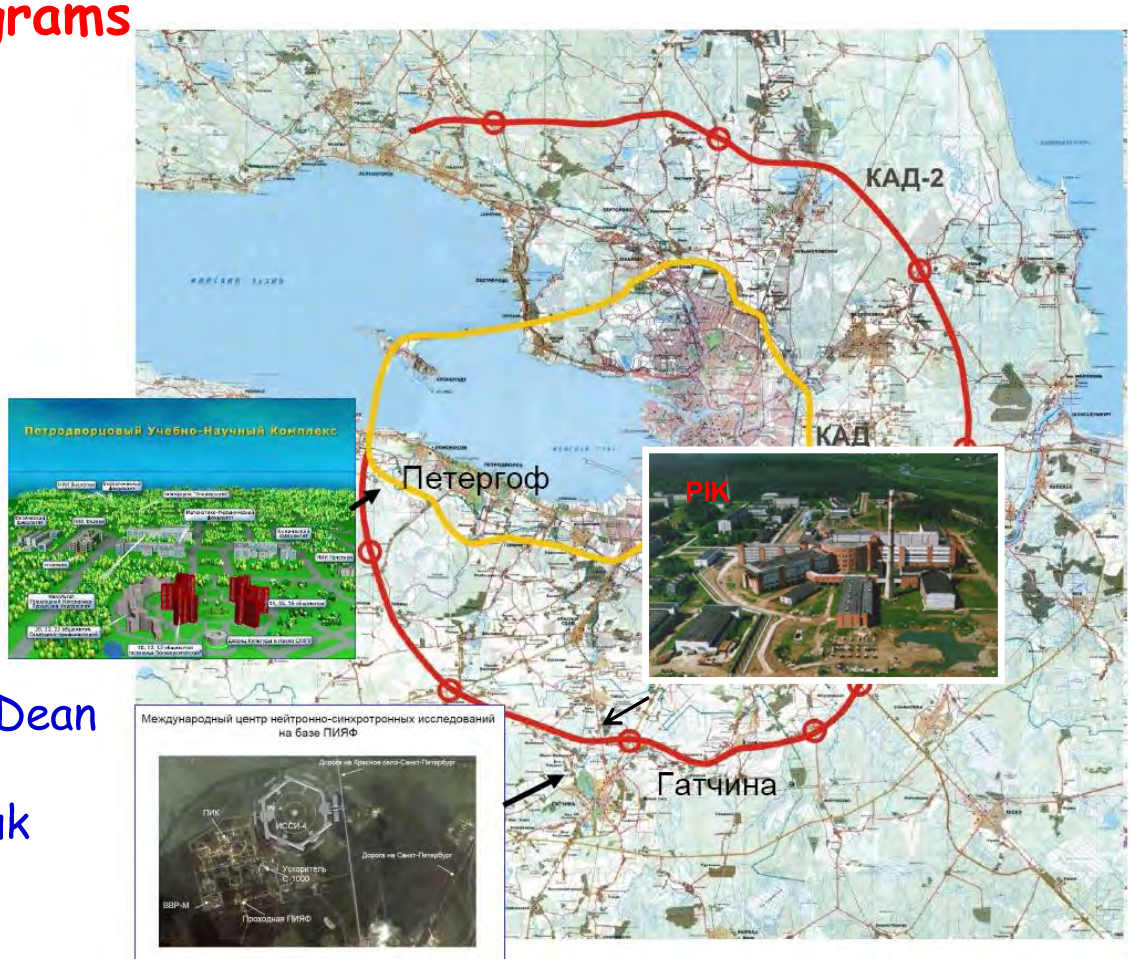
Education programs

St. Petersburg
State University

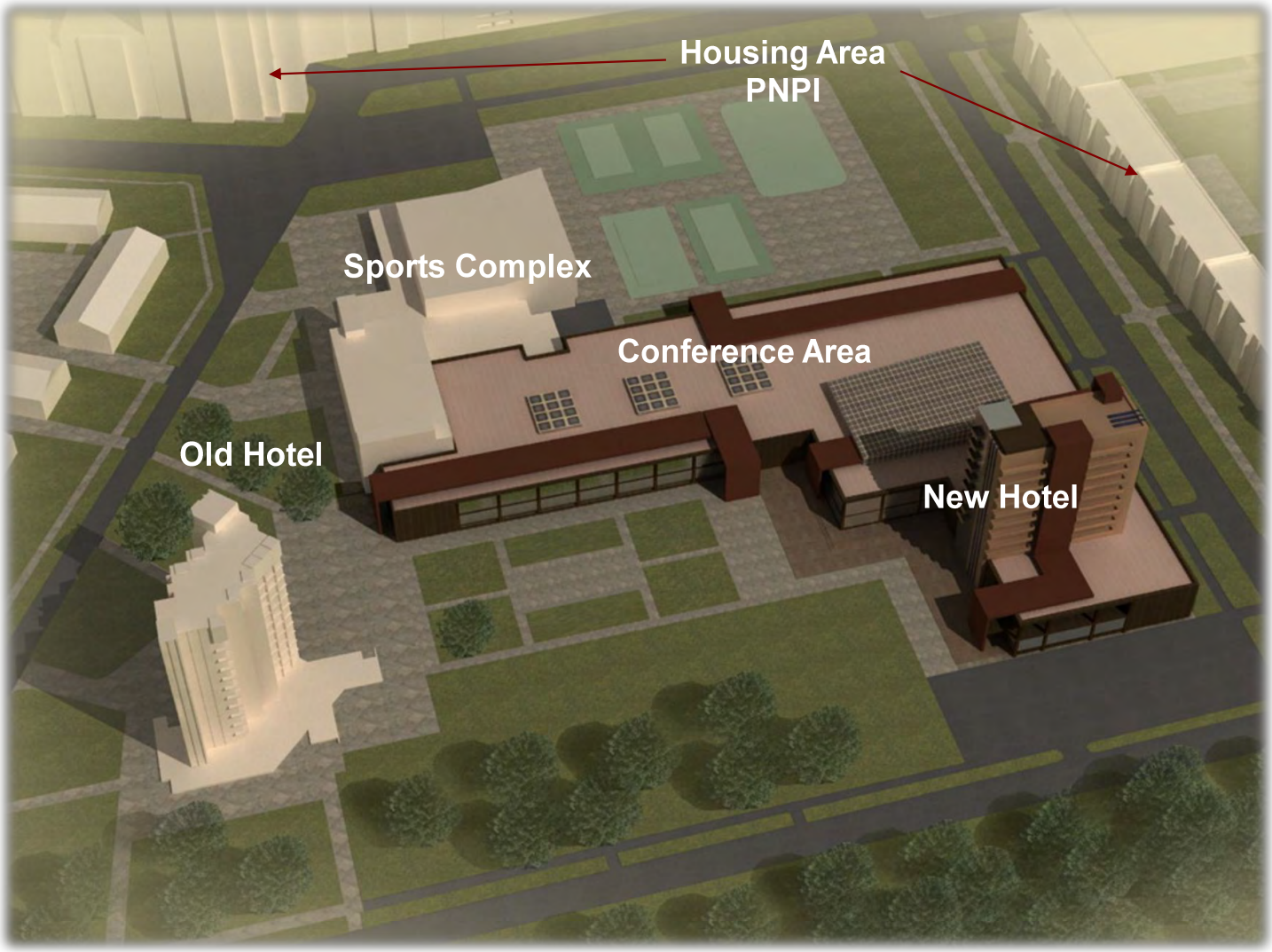
NEW

Chair on Neutron and Synchrotron Physics

Head of chair and Dean of Physics Faculty
Prof. M.V. Kovalchuk

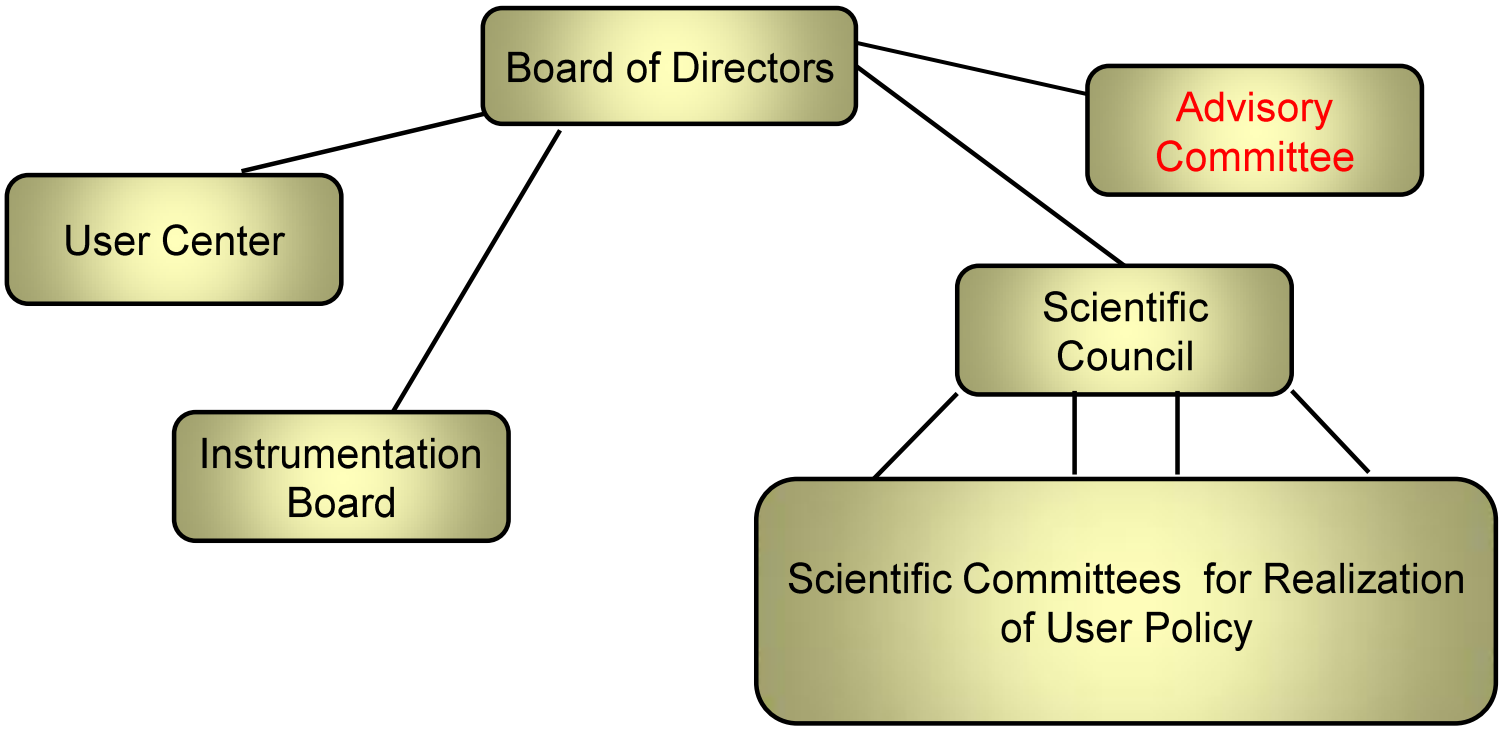


Project for Social Infrastructure for ICNR Gatchina



Intrenational Center for Neutron Research

Administrative Structure (Proposal)



National Research Center "Kurchatov Institute" - PNPI (Gatchina)

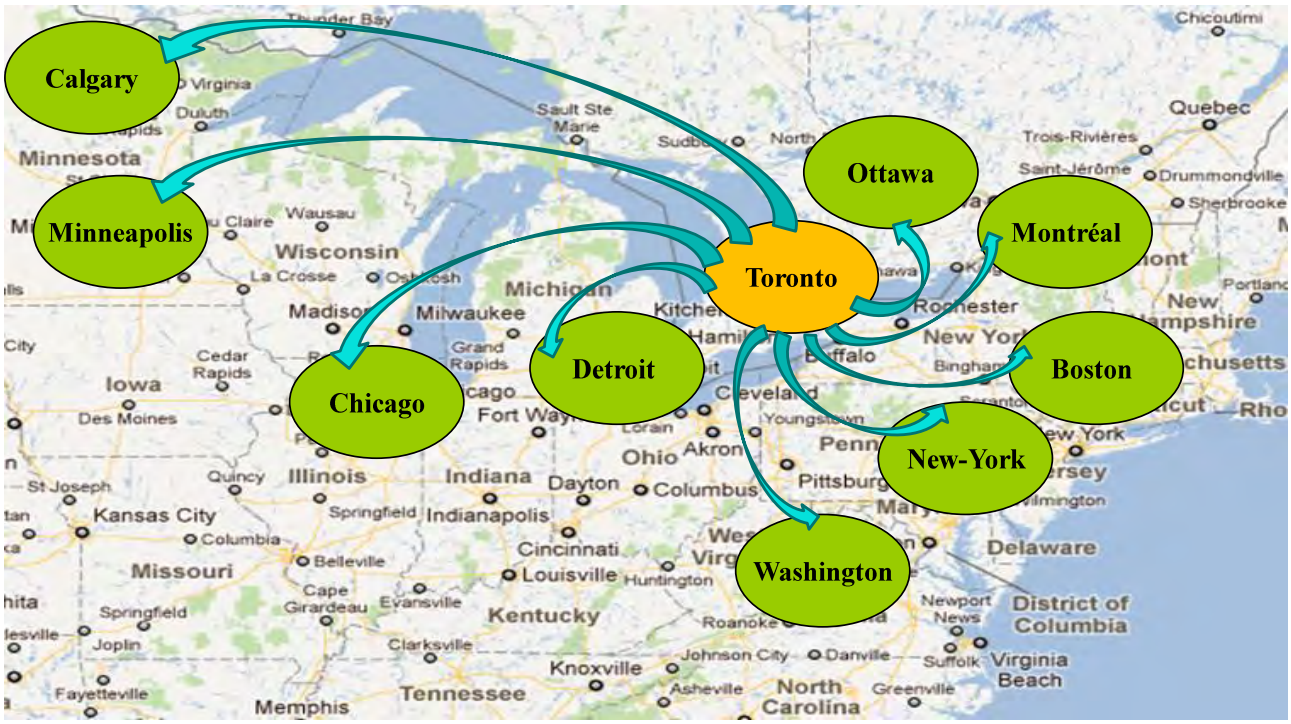
Workshops - 2013

April, 26th Dubna	**Neutron and X-ray Detectors** Chairs: V.N. Shvetsov - A.P. Bulkin
June, 14th-15th Gatchina	**NRC KI – ILL** Chairs: M. Kovalchuk – A. Harrison
September, 19th-20th Gatchina	**Neutron and X-ray Small Angle Scattering** Chairs: S. Grigoriev, A. Okorokov
October, 17th – 18th Gatchina	**German Neutron Centers - NRC KI** Chairs: M. Kovalchuk – S. Schmidt
December, 23th – 24th Gatchina	**Polarized Neutrons Scattering** Chairs: S. Grigoriev, A. Okorokov
For discussion	1. Research Programme 2. Experimental Stations & Research Infrastructure for PIK 3. Education & Exchange Programs

National Research Center “Kurchatov Institute” - PNPI (Gatchina)

Welcome to Gatchina!

ICFITT North America Collaboration map



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