NSR Through the Prism of an User

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The main purpose – to initiate a useful discussion on NSR and how to move forward?

- why NSR is one of the most important USNDP database
- focus on quality & the future of this important activity
- suggestions on how NSR can be improved – input from many colleagues from Argonne & other laboratories/universities

✓Why I cancelled my AT&T phone service?

What a good database should look like ?

Database vs. Web Interface or Chicken vs. Egg

Quality

- **Comprehensive & Complete:**
  - ✓ all related quantities and information should be included
- **Reliable:**
  - ✓ data should be correctly represented
- **Up-to-Date:**
  - ✓ new information should appear promptly

Dissemination

- **Accessible:**
  - ✓ data should be easily available in user requested format

NSR is important - perhaps the most important!

NSR is one of the most important USNDP database

- low energy experimental nuclear physics & nuclear theory: structure, reactions & astrophysics – used on a daily basis at national laboratories, scientific user facilities & universities – no viable alternative exists in the world
- nuclear structure & decay data evaluations – "poor" NSR – "poor" ENSDF
- other NP databases – Atomic Masses Evaluation

Myth (a statement of a (non)expert): "Google can do it all …"

Google scholar 24 Mg Search

Results **1** - **10** of about **5,080,000**. (**0.16** sec)

Nuclear Science References (NSR)

The previous version of Web Interface is here.

Database version of October 20, 2009

NSR Query Results Found 2962 matches. Showing 1 to 100. [Next]

Require measured quantity: ☑ Found 1773 matches. Showing 1 to 100. [Next]

Key wording in the KEY!

NSR is superior!

Chronology of recent events

Feb. 2008

Budget Briefing at ONP/DOE: following a consultation with the USNDP leadership a case was made that the existing/future RIB facilities & GRETINA will provide new opportunities for ND research and that ENSDF (and NSR) are of vital importance!

Nov. 2008

Minutes of the FY2009 USNDP Nuclear Structure & Decay Working Group

> PRC dominates. The meeting expressed a concern that, given the importance of this database to both nuclear structure data evaluators and the low-energy nuclear physics research community, outsourcing of the NSR work from NNDC must always be closely scrutinized to ensure that standards are maintained; we were assured that NNDC is indeed providing such quality control.

Jan. 2009

FY2010 USNDP Work Plan: 0.75 FTE (staff) + 0.1 FTE (staff) + 0.6 FTE (Techn. Adm.)

March 2009

NSDD meeting in Vienna: the NSR manager is leaving - NSR will be outsourced additionally to Slovakia (interesting!) and India; the new NSR manager will devote 20% (0.2 FTE) of his time to NSR?

INDC(NDS)-0559
Distr. G, ND

Is the NSR quality slipping away?

It is true that not everything is black & white, BUT we have been experiencing problems in recent years:

- ✓ delays in key wording journals, conference proceedings and other references
- ✓ missing/incomplete keywords
- ✓ evaluators are being asked to provide keywords …?

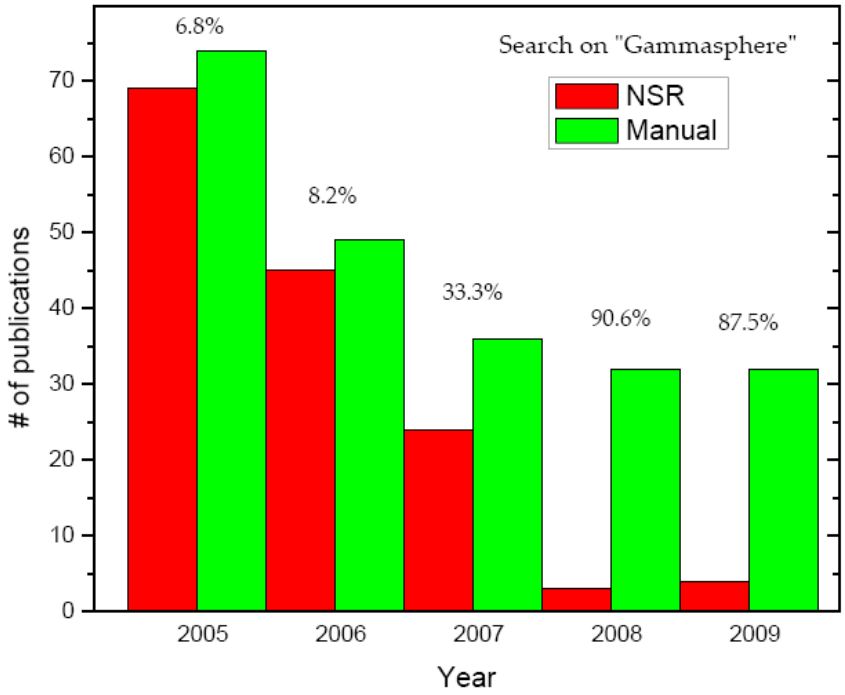
the important QUALITY Assurance and Control are compromised …

Gammasphere - national user facility sponsored by ONP/DOE

task: to get a list of publications where the work is done at GS – should be a piece of cake using NSR – we have done it successfully in the past…

BUT…

what about if I want to search by an institution, e.g. MSU, ANL, ORNL, LBNL, etc. - could be very valuable to the labs and to the DOE sponsor?



What about the future?

The model: NSR Manager **0.2 FTE** - the rest **outsourcing** (balkanization)

BUT …

- ✓ B. Singh (McMaster U) – will retire in ~2 years time
- ✓ M. Kellett (IAEA) – will be completing his term at IAEA in ~3 years time
- ✓ compilers from Slovakia & India??? – rumors (never discussed at USNDP) that they are of past retirement age

a brewing crisis will be looming in about 2-3 years (I wish I am WRONG!)

Example: remember the backlog at IAEA – it is not an easy task to start it from near ZERO – thanks to the colleagues at NDS/IAEA the backlog was solved, but it takes time, more effort, and nerves…

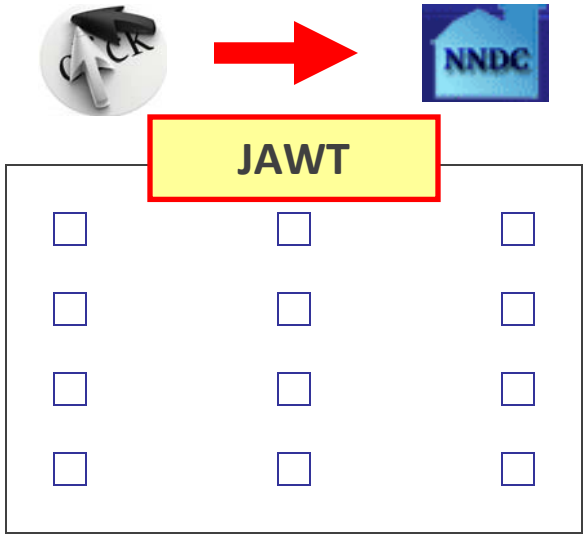
Do we really want to go "Back in the FUTURE"?

How QUALITY Assurance and Controls , and Improvements, to NSR will be achieved with **0.2 FTE**?

Possible NSR improvements?

> Finally, the Division of Nuclear Physics of the APS requests that authors provide a Keyword Abstract. It should be forwarded to the National Nuclear Data Center (NNDC) at Brookhaven National Laboratory, for inclusion in the Nuclear Science References (NSR) database. Please consult http://www.nndc.bnl.gov/nndc/physrev_keywords/ for further information and submission details.

Possible Solution: Develop a Journal Abstracts Web Tool



using the Web tool the authors enter the key words prior final publication with simple clicks of the mouse …

develop such a Web application – it should be "smart" - simple and not time consuming!

NSR manager: work with the editors of the major journals – perhaps start first with APS – PRC & PRL and then extend to NP, PLB, EPJ A & JP G

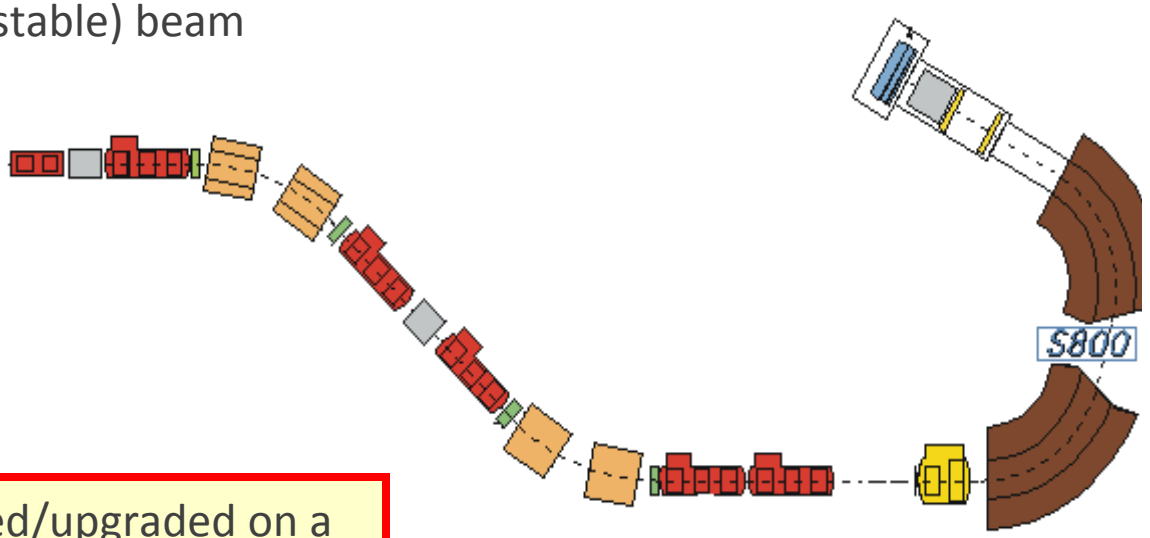
USNDP: work with colleagues within APS and EPS - this is where everybody can help

Benefits: will be done by the authors – high quality and prompt – QA by the NSR manager!

Possible NSR improvements - cont?

Primary (stable) beam

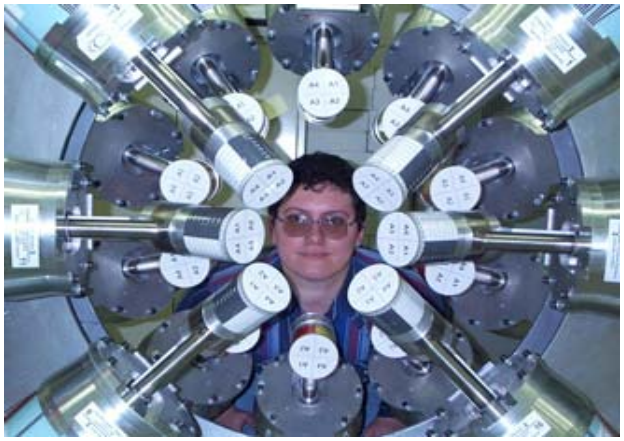
Secondary (RI) beam



NSR needs to be modernized/upgraded on a regular basis – new facilities, new techniques & new physics – new key words & new searching capabilities

One example:

Primary – Secondary Beams key wording /search



Possible NSR improvements - cont?

NATURE | VOL 405 | 11 MAY 2000 | www.nature.com

Science's neglected legacy

Large, sophisticated databases cannot be left to chance and improvisation.

Stephen M. Maurer,
Richard B. Firestone
and Charles R. Scriver

W^3 & the new "digital" world

Disk space is cheap!!!!

NSR should be a repository for PhD thesis's, lab. report, private communications, etc. - these should be available through NSR – there is no copyright issues – What about a "DIGITAL NSR" project – scan into pdf files and make them available?

Suggestion by Makito Oi, Senshu U, Japan at the APS-JPS DNP Meeting

Many people are putting their thesis on personal Web sites or arXiv

Nuclear Experiment

Exotic Collective Excitations at High Spin: Triaxial Rotation and Octupole Condensation

Xiaofeng Wang

(Submitted on 28 Oct 2008)

Submission history

From: Xiaofeng Wang [view email]
[v1] Tue, 28 Oct 2008 02:07:00 GMT (3236kb)

To Conclude …

- NSR is one of the most important USNDP database – with variety of users from both the basic and applied physics communities – it is vital for NP research, ENSDF & AME evaluation activities, future generation scientists in US, and for future NP facilities in US (FRIB)
- NNDC is a focal place of ND compilation, evaluation and dissemination activities in US and it is the world leader! NSR have been and must be an important part of the portfolio – HOW CAN WE HELP?

NATURE | VOL 405 | 11 MAY 2000 | www.nature.com

Science's neglected legacy

Large, sophisticated databases cannot be left to chance and improvisation.

- I see absolutely no problem in collaborating with other colleagues outside USNDP on NSR (BUT NOT permanently outsource), however the main responsibility, including Quality Control and Development should be maintained at USNDP (NNDC) - FTE level of 0.6-0.7 FTE must be maintained!
- remember my at&t story!!!!!

For people who love statistics:
"there three kinds of lies: lies, damned lies, and statistics"
Benjamin Disraeli