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# TASCC

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News about Chalk River's Tandem Accelerator Superconducting Cyclotron facility for users and potential users

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## NPPAP to visit TASCC on April 26

The Nuclear and Particle Physics Advisory Panel will be making a series of "site visits" across Canada in late April. It will visit Chalk River on Monday, April 26. Although no specific instructions about the day's activities have yet been received at TASCC, it is understood that some component of the visit will centre around a "town meeting" open to all those Canadian researchers who do heavy-ion nuclear research.

Since the future direction of sub-atomic physics in Canada may well be determined by the priorities set by NPPAP, it is important that our community makes its interests known.

All TASCC users are urged to attend in person! If that is impossible, please write your views to the NPPAP chairman, Professor Cooper H. Langford (V.P. Research, University of Calgary, 2500 University Drive N.W., Calgary, Alberta T2N 1N4) with a copy to Professor Jim Waddington (Dept of Physics, McMaster University, 1280 Main St. West, Hamilton, Ontario L8S 4L8). Jim is a member of NPPAP and is chairman of the TASCC Users Group.

As TASCC Director, John Hardy, told the newsletter, "The future of everyone reading the newsletter is at stake here. Please take part in the process. Attend on April 26 or write before that. NPPAP will be formulating its recommendations in early May."

## Terminations 'regrettable but necessary'

AECL Research announced March 5 that 114 employees have been given termination notices. Fifty people at the Chalk River Laboratories are affected. The terminations are part of recommendations made by a task team formed to reduce company costs.

President Terry Rummery announced in the company newsletter INTER-COMM that the reduction is "regrettable but necessary in order to address our

## Facility report for February

Extra SF6 gas was added to the Tandem tank in order to improve high-voltage performance. The tank was opened once at month-end to repair a charging cable and two resistors. Refilling of the tank following the repair was slower than normal because of partial liquefaction of the SF6 while stored in the outside tank at -30°C.

Two conical ionizers have been purchased from NEC and have significantly improved the useful beam output from the sputter source. Another will be fabricated at CRL.

The cyclotron midplane was opened once to replace deflector components damaged in a spark during operation at high voltage. The source of an elusive vacuum leak into the midplane was eventually traced to a flange in the r.f. feed line.

These beams were produced:

<i>Ion</i>	<i>Energy MeV</i>
Protons	15
<sup>18</sup> O	120
<sup>12</sup> C	276
<sup>19</sup> F	40
<sup>35</sup> Cl	200
<sup>35</sup> Cl	1225
<sup>37</sup> Cl	187
<sup>70</sup> Ge	2450
<sup>127</sup> I	100

short-term financial needs and to position us to meet our long-term objectives. The reductions are part of an ongoing process to position AECL research to fulfill its new mission and strategic direction."

No employees or positions at TASCC were involved in this first phase of a continuing program of cost reductions.

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## Student database being set up

A database is currently being set up at TASCC to record and track the many students who have worked at TASCC over the years. We have asked some of our university collaborators to provide information where possible, and circulated a list at the Eastern Regional Nuclear Physics Conference held in Pembroke and CRL recently.

We will be appealing to more of our readers for additional information in the future.

The aim of the database is to trace the extent to which TASCC has been important in the careers of the dozens of students who have worked here or visited to participate in experiments. We believe that this information will serve to demonstrate the role our research plays in developing R & D practitioners.

The database will be made available, on request, to universities or institutions with a common interest in promoting physics research.

## Senior ISTC officials visit TASCC

Harry Swain, Deputy Minister of Industry, Science and Technology Canada and Kevin Lynch, Associate Deputy Minister, visited Chalk River Laboratories on February 10.

They were accompanied by the President of AECL Research, Terry Rummery, AECL Research Vice-Presidents Dave Torgerson and Gerald Dolling, and TASCC Director John Hardy.

The group toured several Chalk River facilities, spending an hour at TASCC. Discussions focussed on the future role and funding of AECL's "national laboratory" components such as TASCC.

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## February experiments

**Experiment** : Study of hyperdeformation in dysprosium isotopes around mass-150.  
**Researchers** : A. Galindo-Uribarri, H.R. Andrews, G.C. Ball and D. Ward (*TASCC*); V.P. Janzen (*TASCC/McMaster University*); G. Hackman, S. Mullins(*McMaster U.*); T.E. Drake, J. DeGraaf and M. Cromaz (*University of Toronto*);  
**Beam** : 187 MeV  $^{37}\text{Cl}$   
**Duration** : 9 days

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**Experiment** : Exploratory experiment to test reaction rates for the production of terbium-145.  
**Researchers** : A. Galindo-Uribarri (*TASCC*); S. Mullins(*McMaster U.*)  
**Beam** : 187 MeV  $^{37}\text{Cl}$   
**Duration** : 1/2 day

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**Experiment** : Assessment of the use of the  $8\pi$  spectrometer and miniball to study reaction mechanisms for fully equilibrated nuclei.  
**Researchers** : A. Galindo-Uribarri (*TASCC*); V.P. Janzen (*TASCC/McMaster University*)  
**Beam** : 200 MeV  $^{35}\text{Cl}$   
**Duration** : 1/2 day

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**Experiment** : Cyclotron development run in which chlorine-35 was set up at 35 MeV per nucleon to optimize parameters for first extraction of a germanium-70 beam, which has lower efficiency for acceleration and extraction.  
**Researchers** : Superconducting Cyclotron Beam Commissioning Team  
**Beams** : 35 MeV/u  $^{35}\text{Cl}$  and  $^{70}\text{Ge}$   
**Duration** : 6 days

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**Experiment** : Reactions group measurement of the sub-threshold cross-section for pion production using the Q3D spectrometer to detect the magnesium-24 reaction product.  
**Researchers** : D. Horn, G.C. Ball D. Bowman, W.G. Davies and G. Savard (*TASCC*);  
**Beams** : 23 MeV/u  $^{12}\text{C}$   
**Duration** : 6 days

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**Experiment** : Measurement of the yield of superdeformed mercury-193 transitions in a heavy-ion, xn  $\alpha$  channel.  
**Researchers** : T.E. Drake, G. Zwartz, M. Cromaz and J. DeGraaf (*University of Toronto*);  
A. Galindo-Uribarri and H.R. Andrews (*TASCC*)  
**Beam** : 120 MeV  $^{18}\text{O}$   
**Duration** : 5 days

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**Experiment** : Search for a weak Gamow-Teller decay branch in vanadium-46  
**Researchers** : E. Hagberg, V.T. Koslowky, G. Savard and J.C. Hardy (*TASCC*)  
**Beam** : 15 MeV protons  
**Duration** : 4 days

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**Experiment** : Test of a transmission counter for future single-event-upset experiments.  
**Researchers** : H.R. Andrews (*TASCC*)  
**Beam** : 100 MeV  $^{127}\text{I}$   
**Duration** : 1/2 day

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**Experiment** : Lifetime measurement, by crystal blocking, of the long-lived component of compound nuclei preceding heavy-ion induced fission.  
**Researchers** : J.S. Forster, G.C. Ball, A. Galindo-Uribarri and J.S. Geiger (*TASCC*)  
**Beam** : 40 MeV  $^{19}\text{F}$   
**Duration** : 3 days

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