Results of our measurements appear encouraging and we'll continue our experiments in this field.

REFERENCES

1. *Shculman J.H., Compton W.D.* Color Centers in Solids, Pergamon Press, Inc.New York, 1963.
2. *Seneckburger H. et.al.,* //Appl.Phis., 1981. **A26.** 23-26.
3. *Riesch E. et. al.,* //Radiation protection dosimetry. 1990. 33. 215-226.

THE STEREOTACTIC PROTON THERAPY AT THE 1 GeV PNPI SINCHROCYCLOTRON

N. K. Abrossimov, E. M. Ivanov, V. I. Lazarev, V. V. Lysenko, G. A. Ryabov, D. M. Seliverstov, D. L. Karlin[1)], B. A. Konnov[1)], L. A. Melnikov[1)], B. V. Vinogradov[1)], N. N. Jalinith[1)], O. P. Zargarova[1)], O. M. Zhidkova[1)]

[1)] *Central Research Rentgenoradiological Institute of Ministry of Public Health of RPH, St.Petersburg*

During 1994-1995 the stereotactic ptoton therapy was continued. Data on the treatment are given in Tables 1–3.

Table 1

Experience of stereotactic proton therapy at the synchrocyclotron of PNPI in 1994-1995

	Hypophysectomy		
Total number of patients	Normal pituitary	Pituitary adenomas	Arterio-venous malformations
107(39)	17	27	63(39)

In brackets the number of repeated treatments are given.

Table 2

Experience of normal pituitary

Total number of patients	Cancer of the breast	Ophthalmo-pathy	Diabetic angio-retionopathy	Concer of prostatic
17	4	–	–	13

Table 3

Experience of pituitary adenomas

Total number of patients	Itsenko-Cushing disease	Prolasto-nomic	Somatotrophi-nomic	Non-functioning
27	10	7	9	1

Resalts of patients treatments in 1994-95 are beeng analized now.

DEVELOPMENT OF THE EXPERIMENTAL METHODS TO SEARCH AND STUDY OF T-NONINVARIANT EFFECTS IN RESONANCE NEUTRON INDUCED REACTIONS WITH COMPLEX NUCLEI

I. A. Krasnoschokova, A. M. Morozov, D. V. Nikolaev, A. K. Petukhov, G. A. Petrov, V. I. Petrova, Yu. S. Pleva, A. P. Serebrov, V. E. Sokolov, G. V. Val'ski, S. M. Kalebin[1)]

[1)] *RSC ITEP, Moscow*

Considerable recent attention has been focussed on the possibilities to search and investigate the new T-noninvariance effects (TNE) in some neutron induced reactions. Interest to such investigations was created as a result of drastic enhancement of P-odd effects observed in the vicinity of the weak p-wave neutron resonances like 0.734 eV one of ^{139}La.

In the context of importance of the problem some laboratories (Los Alamos, KEK, JINR) have begun an essential preliminary to these experiments. The main problems to have to be solved now for realisation these experiments are as follows:

— the availabity of the polarized resonance neutron beams with a high intensity;

— development of the polarized nuclear target from 139-La;

— development the effective and precise methods to control and suppress different false instrumental effects which are inevitably arose in such types of experiments.

Two possible ways to develop high flux resonance neutron source ($E_n < 10$ eV) at the steady nuclear reactor WWR-M were tested and compared in the Laboratory of Fission Physics in 1993-1995. In collaboration with RSC ITEP four synchronized rotor system of neutron monochromator has been put into operation at the radial neutron beam [2]. Under conditions of WWR-M reactor (flight-path about 9 m, W $\simeq$ 16 MW,channel diameter 60 mm) neutron intensity achieved, was $\sim 9 \cdot 10^4/E$ 1/cm^2·s·eV. It means that for polarized neutrons (after polarized proton filter) the intensity can be not higher than $\sim 4 \cdot 10^3/E$ 1/cm^2·s·eV. This figure is comparable with the polarized neutron intensity at well known installation "POLYANA" in JINR ($\sim 6 \cdot 10^3/E^{[0.9]}$ 1/cm^2·s·eV)with the same flight path but for more wide neutron energy range [2]. The second possibility to get polarized resonance neutron beam ($E_n \leq 2$ eV) of high intensity about $2 \cdot 10^5$ 1/E 1/cm^2·s·eV was realized some years ago for systematic investigations of P-odd effects in nuclear fission process [3]. It consists in use of neutron diffraction at Heisler alloy crystal magnetized up to suturation. One can