

Nordic Society for Radiation Protection

An Important Forum for RP

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- **When, how, and why did it start**

June 1964 = 60 yrs of Nordic and International (IRPA) collaboration

- **What is the scope**

Include non-ionising radiation; natural; roles of other organisations

- **Highlights from past meetings**

Important scientific and regulatory topics (and some incidents)

- **Reasons to continue**

Future possibilities



LUNDS
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Please Bear With Me, I'm Hard Of Hearing!!



When, How, and Why Did NSFS Start

It All Began in 1964

DE NORDISKE FLAGGORNA

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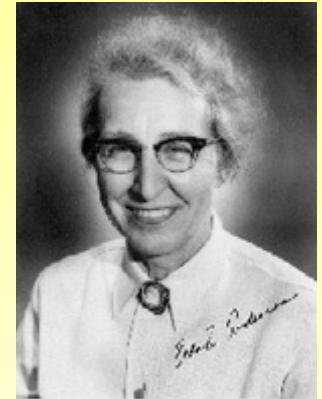


But, Before The Beginning...

- **The Manhattan Project: working with quantities and types of radiation never before envisaged**

A 'Health Physics' group was formed

1944, first formal HP training at ORNL, Elda Anderson

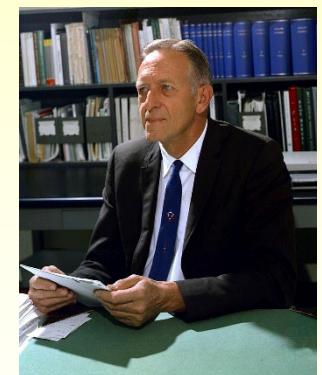


- **1955: The (US) HP Society formed**

Interim, then formal, president, KZ Morgan

1957, 'Health Physics' journal launched

'Sections': France 1961, Japan 1962, UK SRP 1963



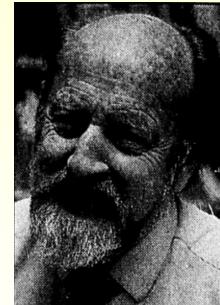
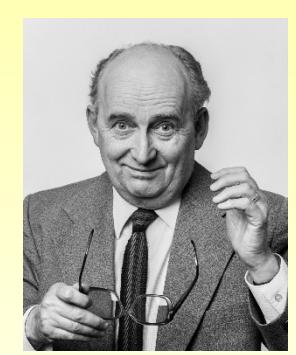
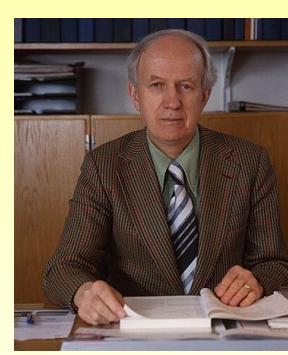
- **1964: IRPA formation began**

KZ Morgan contacted 1000 people in 70 countries

Rolf Sievert was initially apprehensive

Inaugural NSFS Meeting, Stockholm 1964

- 53 participants: Sievert+33 Swedes, E Juel Henningsen+7 Danes, K Koren+4 Norwegians, JK Miettinen+4 Finns, GF Petersen as the 1 Icelander



- Importantly, the heads of authorities were active members
At the time, the heads were all experts in our profession
Sievert was the first chairman of NSES

NSFS – A Formal IRPA Member 1965

- I ly



1972, John Dunster saved Henri Jammet, who was unable to swim, from drowning in the hotel pool

Some NSFS Achievements

- **18 regular meetings (before the present one)**

Often with a scientific theme, e.g., radioactive waste, natural radiation...

- **Various other themed meetings**

Radon. Geilo 1980

RP in NPPs. Öland 1985

Quality in RP work, Malmö 2001, 2004

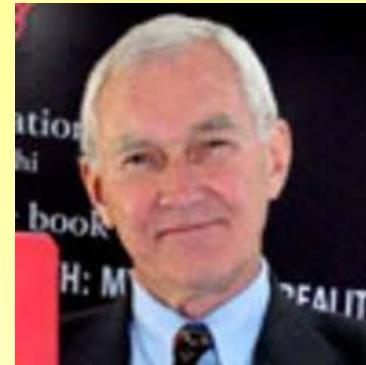
...

- **Deeply committed people created a good collaboration climate (as for example the late Tua Rahola from STUK)**
- **A boost to RP by the Nordic co-operation**
- **Health Physics (journal) available at significant discount**

What Is The Scope

IR and NIR, man-made and natural

Björn Tengroth, SE
Ophthalmologist, optic
radiation expert



Mike Repacholi, AU
Biophysicist, WHO NIRP expert.

1974, IRPA TG on NIR which in 1977 became INIRC (Henri Jammet) – in 1992 ICNIRP was chartered (Mike Repacholi)
1976, NIR included in Swedish RP legislation

1970 survey of Rn in Swedish mines – high levels due to unsuitably designed ventilation

1973 Lindell's Sievert lecture argues against dose limits for natural radiation

1978 NSFS discusses natural radiation at Visby meeting

1983, Lindell asks ICRP to consider dose limitation for natural sources

NSFS In a NordicContext

- **Other radiation organisations** (Nordisk Förening för Medicinsk Radiologi, Nordiska Sällskapet för Klinisk Fysik...)
- **Nordic nuclear safety organisations** (Nordiska Kontaktorganet för Atomenergifrågor (NKA) 1957-1990, Nordic Nuclear Safety Research (NKS))
- **Some examples of Nordic organisations for other sciences** Nordic Society Oikos, N S of Nephrology, N S of human genetics and precision medicine, N S of gynaecological oncology, N S of invention and discovery, N S of middle eastern studies,

NSFS Influencing Agencies

- The waste issues!

- The Flag Books!

- The Nordic ‘Chef’ (chief!) meetings

And associated / consequent Authority meetings

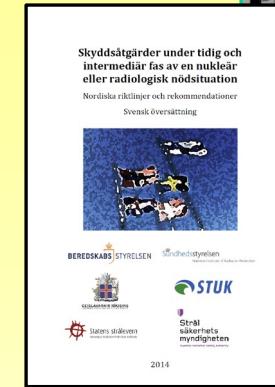
- The Nordic/British ('Anglo/Nordic') meetings

- Nordic seminars

Nordic radioecology seminar, Rättvik 1988, Norrköping 1976)

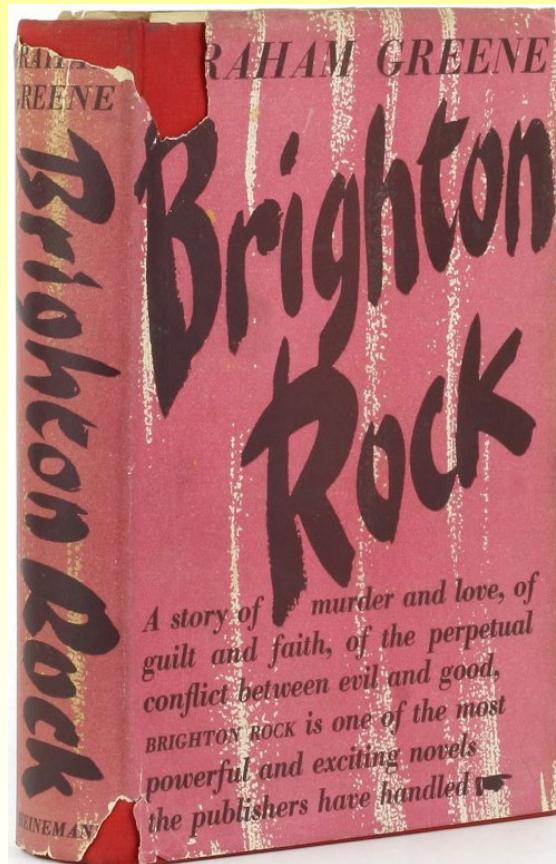
- Nordic PhD study courses

Radioecology, Lund 1980, 1991; Radiation interaction, -detection, and – dosimetry, Trondheim-Oslo-Malmö-Lund-Göteborg-Linköping, etc.



Highlights From Past Meetings

NSFS And SRP At IRPA2, Brighton 1970



NSFS And SRP At IRPA2, Brighton 1970

- **NSFS Delegation**

Egil Juel Henningsen, Olli Castrén, Gisli Petersen, Per Ofstedal (Bo Lindell present as an EC member)

- **First introduction of differential CBA in RP**

*HJ Dunster and A McLean used insurance valuations – 500 USD/man-Sv
A Hedgran and B Lindell used willingness-to-pay - 50 kUSD/man-Sv (or
10 kUSD from direct valuation)*

This led to the use of CBA in ICRP P22 and P26

NSFS Meetings Always Had Interesting Guests

- **Copenhagen 1971 meeting**

Controversially, NSFS had invited Ernest Sternglass

The discussion was lively and critical!



- **Copenhagen 1984 meeting**

Robin Mole talked about radiation injuries to foetuses

Joint NSFS – FS 'Inseltagungen'

- **Mariehamn 1987**
- **Visby 1989**

Jaak Sinnaeve, CEC research, a guest of honour

Inge Schmitz-Feuerhake participated....



Some Guests Were (Fairly) Uncontroversial

- **Ronneby 1990**

Abel González represented IAEA

Burton Bennett represented UNSCEAR

Discussions centered on the concept of risk. Would limits on consequences be feasible?



Reasons To Continue

The Nordic Advantage

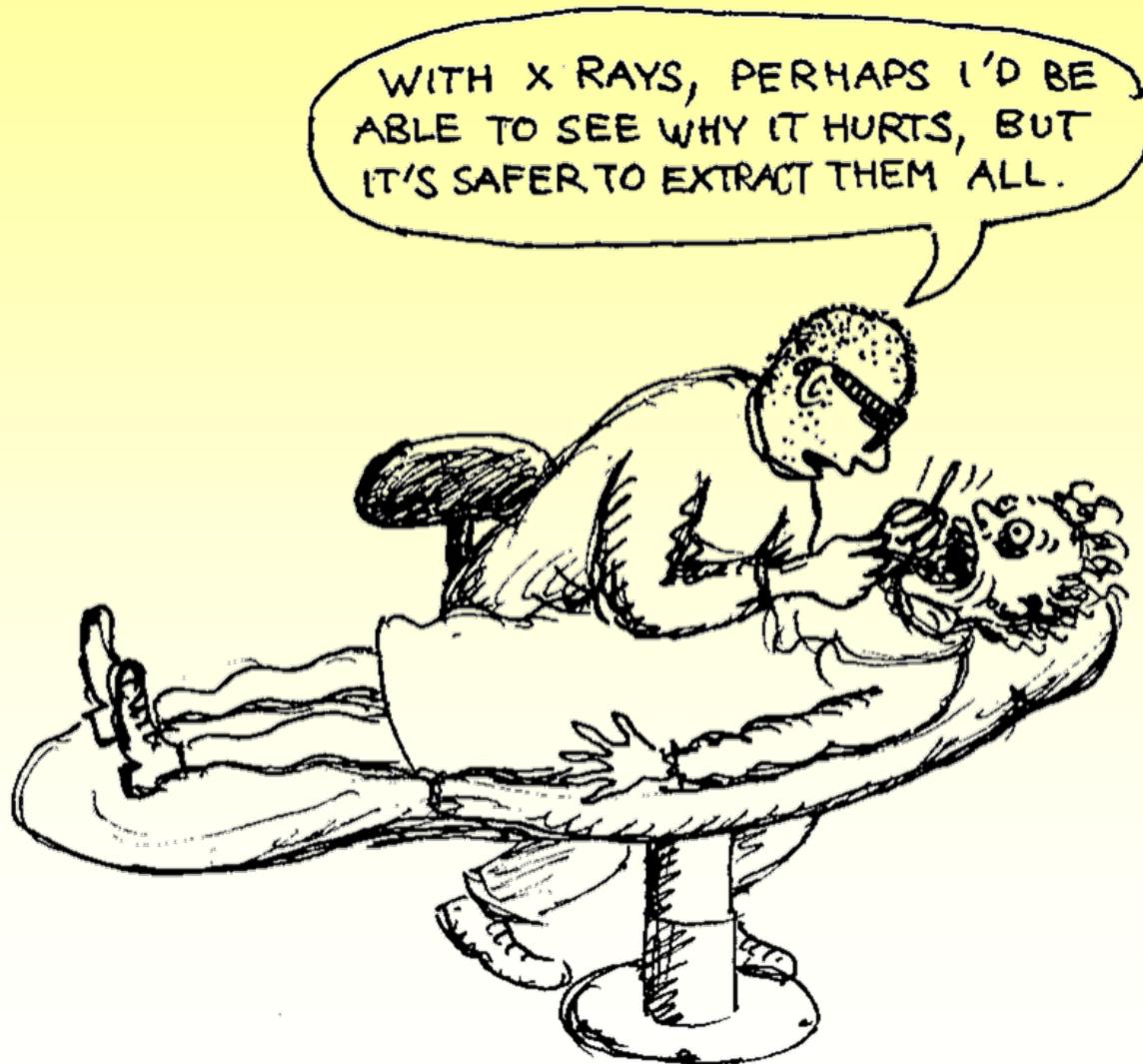
- Competence transfer between generations
- Cost, language, and cultural advantages
- EU has not replaced the Nordic co-operation!
- We are needed in IRPA
- We can collaborate with SRP, Fachverband... (see track record!)
- Old and new issues need to be addressed

Medical RP Still Has Problems

Justification: Indiscriminate Referral



Sometimes, It IS Justified!!



How To Handle Exaggerated Low-Dose Risks

The 'European' (UK) Approach vs. The US Approach

- Why allocate significant resources to reduce some low exposure levels to even lower levels?

Exposures well within the variability of natural background

Make no real difference to the total exposure of any individual

Poor utilisation of societal resources, bringing our profession into disrepute

- For example

Clearance vs. holiday-making



Clearance vs holiday-making

- **Clearance criterion: $<10 \mu\text{Sv/a}$**

Actual doses nearer $0.1 \mu\text{Sv/a}$ due to 'conservatism'

Very few individuals exposed, they get 2.0001 instead of 2 mSv/a

- **Cornwall holiday in the UK**

Tens of thousands holidaymakers each year

Each person gets ~ 2.5 instead of 2 mSv/a

Nobody is remotely concerned or interested!

- **Is clearance giving value for money (*best use of resources*)?**

- **Is this common sense?**

***NO**, so the criterion, or at least its application, must be updated!*

THIS IS THE EUROPEAN (UK) APPROACH

USA: The Small Risks Do Not Exist So Let's Go For de Minimis

The screenshot shows a web browser displaying the HPS.org website. The page features a dark blue header with the HPS logo and navigation links for Quick Links, Organization, Publications, Public Information, Resources, and Ask Experts. A banner for 'LASER SAFETY OFFICER (LSO) TRAINING' is prominently displayed, stating 'Courses Worth up to 31 CECs by AAHP!'. To the right of the banner are links for Classroom, Livestream, and Online training, along with a 'LASER SAFETY U' logo and a 'REGISTER/REQUEST INFO' button. The main content area features a heading 'The History of the Linear No-Threshold Model' and a note about preapproved continuing education credits. Below this, there is text about the international community's efforts to review radiation protection and the role of the Health Physics Society (HPS). The Windows taskbar at the bottom includes icons for various applications like File Explorer, Edge, and Office.

- Instead of LNT, postulate a *threshold value* below which no late harm occurs, so everybody can love nuclear power

Quo vadis NSFS?

