Thematic Area
Industry and Environment related projects

A) Industry

New projects

1. **Process diagnostics and optimisation in petroleum/chemical industries using NDT, radiotracers and sealed sources**
2. **Optimisation of mineral resources recovery by using low radioactivity and portable nucleonic gauges**

Old projects

1. **Non Destructive Testing and Evaluation (RAS/8/085)**

Note: Closely linked to UNDP/RCA/IAEA sub-project 1.4: Clean and Energy Efficient Production Processes

Thematic Area
Industry and Environment related projects

B) Environment

New projects

1. **Upgrading of natural polymers and environmental conservation by radiation processing.**
2. **Dam Safety and Dam Sustainability**
3. **Impacts on Environment Water Resources through Isotopic and Geochemical Techniques.**

Old projects

1. **Better Management of Environment and Industrial Growth (RAS/8/076)**
2. **Isotopic and Related Techniques to the Assessment of Air Pollution (RAS/8/082)**
3. **Isotope use in Managing and Protecting Environment (RAS/8/084)**

Note: Closely linked to UNDP/RCA/IAEA sub-project 1.1: Access to Clean Drinking Water, 2.1: Management of Marine Coastal Environment and its Pollution and 1.3: Air Pollution

Related Footnote Projects upto year 2000

Industry

RAS/8/077 – Thematic Programme on Advanced Techniques for Industry

- **Applicatiopns of NDT in non-metallic materials (concrete)**
- **Upgrading Cellulosic Agrowastes**

Environment

RAS/8/083 – Management of Marine Coastal Environmental Pollution

- **To address problems associated with harbour or estuary development and off-shore effluent dispersion**

The above objectives could be amalgamated into other projects in view of the non-extension of UNDP sub-projects.

Isotope Applications in Industry

- **Considerable progress in the region in the industrial application of Radiotracers, Sealed Sources & Nucleonic Gauges**
- **No competing alternative methods, economically beneficial and hence will play an important role**

Major applications are in

- **inspection and troubleshooting of various types of vessels and pipelines in petroleum refineries**
- **oil and gas recovery in oil field production**
- **improvement in precious mineral processing of metals like gold and silver**

Workplan Summary

Process Diagnostics and Optimisation in Petroleum/Chemical Industries using NDT Radiotracers and Sealed Sources

Year	Date	Activity	Budget USD
2001	May	RW on corrosion monitoring in petroleum/chemical industries, 2 weeks, MINT, Malaysia or OAEP, Thailand	$35,000
2001	Dec	RW on process diagnostics using radioisotopic techniques in petroleum/chemical industries, 2 weeks, BARC, India	$35,000
2001	Oct	RTC on NDT ISI in petroleum and petrochemical industries, 1 week, Pinstech, Pakistan.	$25,000
2002	Jun	RW on process optimisation using tracers in petroleum/chemical industries, 2 weeks, KAERI, Korea	$35,000
2002	Mar	REMS on benefits and safety of radiation/radioisotopic techniques, 1 week, BATAN, Indonesia	$25,000
2002	Sep	EGM on tracers in oil field investigations, 1 week, China	$25,000
2002	Nov	EGM on NDT, sealed sources, radiotracers in petroleum/chemical	$25,000

Year	Date	Activity	Budget USD
		industries, 1 week, OAEP, Thailand	
		expert assignments, 3 man-months/year	$90,000
		fellowships, 9 man-months/year	$60,000
		equipment, $40,000 per year	$80,000
		TOTAL	$435,000

Workplan Summary

Optimisation of Mineral Resources Recovery by Using Low Radioactivity and Portable Nucleonic Gauges

Year	Date	Activity	Budget USD
2001	Sep	RW on optimisation of mineral resources recovery by using low radioactivity and portable nucleonic gauges, 2 weeks, Hanoi, Viet Nam	$35,000
2002	May	RW on optimisation of mineral resources recovery by using low radioactivity and portable nucleonic gauges, 1 week, Hanoi, Viet Nam	$25,000
2002	May	REMS on mineral resources recovery by using low radioactivity and portable nucleonic gauges, 3 days, Hanoi, Viet Nam	$20,000
2002	Dec	PCM on review of optimisation of mineral resources recovery, 1 week, Hanoi, Viet Nam	$25,000
		expert assignments, 1.5 man-months/year	$40,000
		fellowships, 4.5 man-months/year	$32,000
		equipment, $65,000 per year	$130,000
		TOTAL	$307,000

Workplan Summary

Upgrading of Natural Polymers and Environmental Conservation by Radiation Processing

Year	Activity	Budget USD
2000	Regional Group Training Course on Modification of Natural Polymers by Radiation Processing Vietnam/India/Indonesia/Thailand/China/Korea/Malaysia/Phillipines /Srilanka 3-7 July 2001, Vietnam Duration: 1 week (10 participants)	US$ 14,000
2000	Regional Workshop on Radiation Processing of natural polysaccharides for healthcare products Vietnam/India/Indonesia/Thailand/China/Korea/Malaysia/Phillipines/Bangladesh/Srilanka/Myanmar/Japan November 2001, China Duration: 1 week	US$ 50,000
2001	Regional Workshop on status and potential of Radiation Processing of natural polysaccharides for healthcare products Vietnam/India/Indonesia/Thailand/China/Korea/Malaysia/Phillipines/Bangladesh/Srilanka/Myanmar/Japan June 2001, Japan Duration: 1 week	US$ 50,000

Year	Activity	Budget USD
2001	IAEA Fellowship Training Vietnam/Indonesia/Thailand/China/Korea/Malaysia/Phillipines/Bangladesh/Srilanka/Myanmar (2 man-month/ for 5countries)	US$ 33,000
2002	PCM for conclusion of the project Vietnam/India/Indonesia/Thailand/China/Korea/Malaysia/Phillipines/Bangladesh/Srilanka/Myanmar/Japan November 2002, Thailand Duration: 1 week	US$ 50,000
	TOTAL 2001/2002	$133,000