



Environmental Radiation monitoring station and Early warning system

Ministry of environment
Radiation protection center
Iraq

RMCC-8

Early warning system consists of two parts:-

1- the main System in the RPC building where following-up the continues work of sub-systems, from the incoming data containing any change occurs.



RMCC-8

2-sub-system of early warning



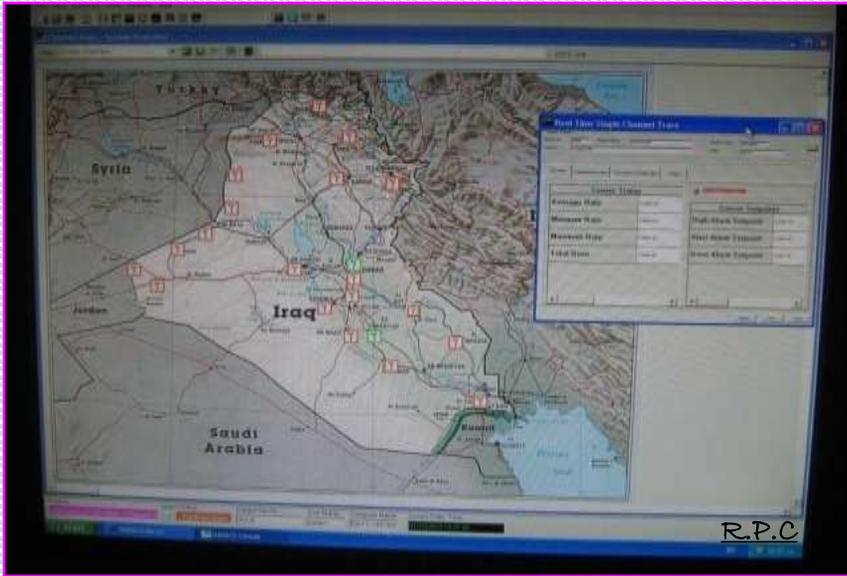
Map of Iraq and locations of the provinces



Provinces

(Baghdad, Basra , dewanya , karkuk, Dohuk , najaf , safwan , dyala , anbar , muthana, karbalaa , salah al-deen ,babyl , wasit , arbeel , thi Qar, qaaem)

The main station contain a special (RADACS) system works on receiving data from the specific locations of the system



Ministry of Environment
Radiation Protection Center
Babel Environmental Office

Early Warning Project



From 22 / 11 / 2009 to 26 / 11 / 2009

Day	Date	Time AM/PM	Readings $\mu\text{Sv/h}$	Remarks	Reader	Job Title
Sunday	22/11/2009	09:00AM	1.24E-01	الجور صبي	رياح جنوبية خفيفة	القرظبي
		11:00AM	1.34 E-1	الجور صبي		
		01:00PM	1.02 E-1	الجور صبي		
Monday	23/11/2009	09:00AM	1.94 E-1	الجور صبي	هاتفي عزازي كاشف	د. راجح القزويني مهندس
		11:00AM	1.34 E-1	الجور صبي		
		01:00PM	1.02 E-1	الجور صبي		
Tuesday	24/11/2009	09:00AM	1.34 E-1	الجور صبي	الله مازي راجح	د. القزويني
		11:00AM	1.37 E-1	الجور صبي		
		01:15PM	1.19 E-1	الجور صبي		
Wednesday	25/11/2009	09:00AM	1.03 E-1	الجور صبي	فهد عدي	د. راجح القزويني
		11:00AM	1.21 E-1	الجور صبي		
		01:00PM	1.22 E-1	الجور صبي		
Thursday	26/11/2009	09:00AM	1.07 E-1	الجور صبي	مهدى ابراهيم راجح	د. القزويني
		11:00AM	1.28 E-1	الجور صبي		
		01:00PM	1.02 E-1	الجور صبي		
Friday				Holiday		

Results

By analyzing the results of early warning systems readings for the period (2009 - 2011), then determined the average of the background radiation of Iraq which is $0.148 \pm 0.033 \mu\text{sv/h}$.

RMCC-8

NEW PROJECT

Environmental radiation monitoring station

- RPC was supplied with this station to achieve a project called "Develop Early Warning System and Environment Radiation Monitoring", within five years starting in 2010.
- sub-stations should be installed at the important point in the border provinces in Basra, Dayla., Qaim(Anbar) and Nainwa. in order to monitoring the atmosphere in those stations specially with the neighboring countries which interested in nuclear activities.

RMCC-8

Map of Iraq set on it the sub-station location

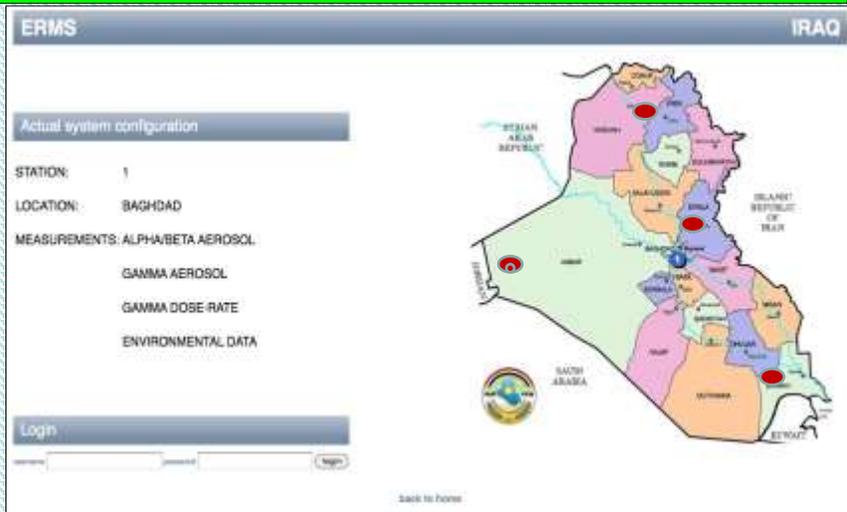
ERMS IRAQ

Actual system configuration

STATION: 1
 LOCATION: BAGHDAD
 MEASUREMENTS: ALPHA/BETA AEROSOL
 GAMMA AEROSOL
 GAMMA DOSE-RATE
 ENVIRONMENTAL DATA

Login

Back to Home



The full station include three parts

- Sub-station
- The main station
- Work station

RMCC-8

Sub-station (RAM31)



- This station contains laboratory equipments, cover all needs to provide analysis of global fallout due to the nuclear accident and nuclear test and identify of radioactive contamination.



measuring Devices of background radioactive average



Geiger Muller counter

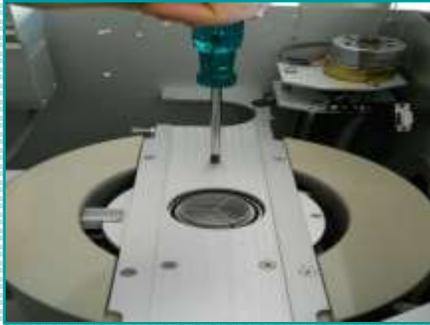


air filtering system

Mechanism of moving & lifting the filter



A gamma energy measuring System



A high purity
germanium detector



Alpha & beta measuring System

Silicon detector for alpha & beta



RMCC-8

Weather conditions determents



An integrated system to determine temperature , wind speed & it's direction , pressure & rain amount, synchronous with the sub-system working

RMCC-8

The main station



Receiving the data from the sub-station in tables form.

RMCC-8

Work station

- Analysis of the received data and gives a final reports using software.
- Archive data and save data (storage)

RMCC-8

Some important notes

One of the most important things that must be referred to is that this system works automatically a Generator has been provided for 24 hours.



RMCC-8

The system is equipped in radiation protection center as a beginning in working and running, and will be sent and transfer to its main location, one of the border locations.

RMCC-8

Cooling system

As well as the system is provided with cooling system in each station



Training course for Environmental R adiation monitoring station in Rome

Main purpose

- How the environmental monitoring station works on the RAM31, RIM01 by special soft ware program .
- lets us know the radioactive isotopes that exist in the air .
- Making a calibration to the systems that located at the station.

RMCC-8

Training items

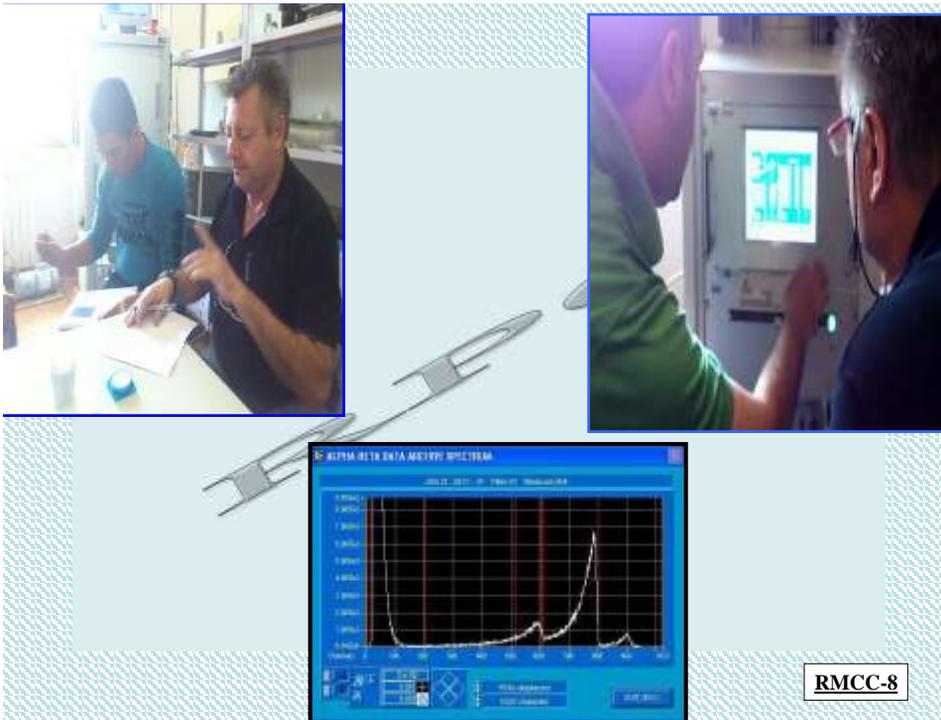
- The expert hold the cooling process day before the start of the work station
- The definition of the properties of this program and its installation process
- Start the actual operation of the station
- Work directly by the staff of the packing process filters and screening process for sub-station



RMCC-8

- The actual training technical staff to run the station and take the results after conducting screening and follow-up data transfer to the main station
- The follow-up to the Internet and work system of data transfer between stations
- Make experiments on the main and sub-stations for the order to make sure that the transfer process between them.

RMCC-8

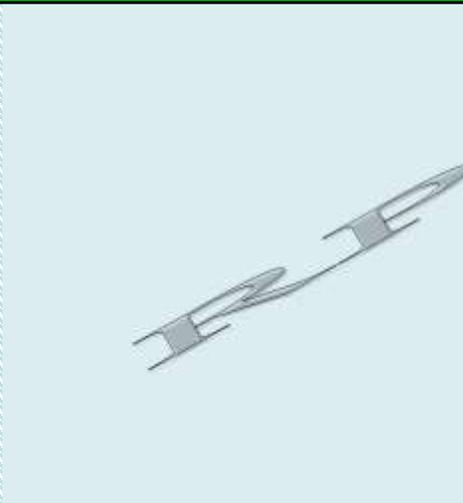


RMCC-8

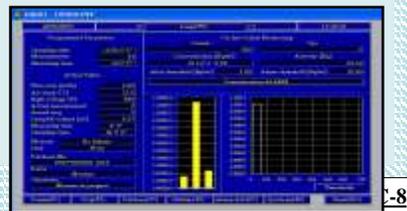
- Explain the relationship between the RAM31 with RIM 01 and system of data storage among themselves and how to transfer data to the main station.
- Standard sources were used during training to cause alarm and send emergency messages to the main station and how to receive

RMCC-8

Iodine -131 Examination Station



- (ROI) Has been divided to 4 areas in order to determine isotope and highlight the energy I-131 within the space and clear in order to be sure of the presence and while the emergence of the energies of isotopes other does not give the system injunction alarm, because the energies are not within the ROI and of iodine isotope.
- the system has been Calibrated by Cs-137 as well as the Ba-133 source.



- The system uses a special container cartridge containing the element carbon, which is based on the absorption of any of aerosol in the air and this cartridge uses a possible two-week period of time and are replaced with one another while no need of it



RMCC-8

- After complete training became possible to run all stations and are currently working to contract with the company specializes in providing us the Internet service to complete the network between all the main and sub-stations

RMCC-8

Thanks for ALL

R.P.C

RMCC-8