NUCLEAR POWER PLANT RADIATION MONITORING SYSTEM

Model ~ RMS-TA

FEATURES:

- **CREATES A SYSTEM WIDE DETECTION MONITORING HIERARCHY**
- ACCOMMODATES COMPLETE RANGE OF DETECTORS & MONITORS INCLUDING AIR, STACK, LIQUID EFFLUENT, & PARTICULATE
- ALPHA, BETA, GAMMA, NOBLE GAS, TRITIUM, NEUTRON
- TWO WAY COMMUNICATION WITH THE CONTROL ROOM CPU /SERVER
- **FM-9W-HUB** INCORPORATES 20 OR MORE DISCRETE COUNTERS.
- OPERATOR DISPLAY AND CONTROLS:
  - CLEAR & ACCURATE
  - EASY to UNDERSTAND & USE
- SYSTEM CHANGES DO NOT REQUIRE PROGRAMMER
- REAL-TIME, IN-LINE, CONTINUOUS MONITORING
- FAIL SAFE ALARMS, MODULAR DESIGN
- LOCATION SPECIFIC ALARMS & SETTINGS
- DATA ARCHIVE & RETRIEVAL
- REPORT GENERATION
- **IP 65**

FM-9W-HUB DISPLAY

Technical Associates provides standard and custom designed radiation monitoring equipment to the nuclear power plants globally.

The United States, Canada, United Kingdom, Sweden, France, Korea, Japan, China, to name a few.

TA Digital RMS Radiation Monitoring Instrumentation for Nuclear Power Plants is a complete line of radiation monitors including but not limited to:

- Noble Gas monitors
- Off-line and In-line Liquid Effluent Monitors
- Particulate & Iodine Monitors
- Area, CAMs Stack Monitors, & Atmosphere monitors
- Accident and Post-Accident monitors.

SYSTEM WIDE MONITORING HIERACRCHY:

- FACILITY WIDE
- BUILDING SPECIFIC
- INDIVIDUAL AREA OR LAB

DESCRIPTION:

The **RMS-TA System** is a multi-function, real-time, distributed, radiation detection system that monitors changes in radiation fields and radioactivity in and around a nuclear power plant.

Multi-Detector systems such as Area Monitor systems, Perimeter Monitors or even a Sorting Table style Trash or Laundry monitors feed their detector pulses directly into the **FM-9W-Hub,** a local RMS computer & Ethernet port with 20 or more built-in counters.

RMS-TA operates as an Ethernet system with central control in the plant control room. **RMS-TA** communicates with a wide variety of detectors and sub- systems & accomplishes diverse measurement and control tasks.

TA CBRN Real - Time Air & Water Specialists

TECHNICAL ASSOCIATES Divisions of US NUCLEAR CORP

OVERHOFF TECHNOLOGY **OTCQB-UCLE**

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DESCRIPTION SPECIFICS:

The **RMS-TA System** provides a single monitoring solution for multiple systems within a Nuclear Power Plant. An advanced built-in, computer network centered on the FM-9W-Hub which serve as an Ethernet node that communicates with the control room CPU /server.

Powerful, self-contained, multi-channel Stack detector-systems

Simpler systems including single channel Air Monitors as well as some stand-alone Area Monitors have fully-addressable, two-way USB-ports that communicate with the control room CPU /server.

Large numbers of Gamma & Neutron Area Monitor Detectors disbursed throughout most plants have local pre-amps, line-drivers and high-voltage-supplies; feed their pulses into the **FM-9W-Hub**, a specialized computer, containing 20 or more simultaneous & independent counters. The **FM-9W-Hub** analyzes these detector signals, and sends back signals to trip the local alarms as needed.

CENTRAL CONTROL: The control room CPU /server has authority and **capability to change**:

Local Alarm Settings
Baseline Zero Settings
Counting Time Constants
Calibration Factors & Other Parameters

OPTIONS:

- **Acknowledge Local Alarms**
- **Activate Solenoid Check Sources**

DETECTOR TYPES:

Noble Gas Monitors	**Off-Line & In-Line Liquid Monitors**	**Particulate & Iodine Monitors**
Gamma Area Monitors	**Neutron Area Monitors**	**Perimeter Monitors**
Accident Monitors	**Post-Accident Monitors**	**N-16 Leak Monitors**
Tritium Monitors	**Alpha Beta Gamma**	**CAMs Stack Monitors & More**

SOFTWARE DESCRIPTION:

Reporting

RMS-TA Overview Software is straight forward, robust, easy to use, & accomplishes a wide variety of measurement & control tasks. Status Reporting & readings of all RMS detectors up-the-line to the Control Room CPU /server console. High capacity hard drive, & CD-writer make it easy to archive data for later analysis.

Data Analysis, Display, Hard-Drive, Hard-Copy, & Data Archive

RMS-TA Overview Software provides for each data collection channel, the net counts are automatically converted to suitable engineering units. **For Example:** Air & Stack monitors typically read out in uCi on the filter or in concentration units, such as uCi/ml or Bq/m^3 or other units of users choosing.

This real time information can activate door-locks, effluent-control-valves as well as triggering the alarms. Also, all data is saved to the hard drive in spreadsheet format. Historical data is easily displayed on-screen (and/or printed out on the included printer) in tabular format, showing quantitative information. Data is recorded frequently so time-resolution is excellent.

System Flexibility

Addition of new detectors as well as new calculations or functions can be made easily by user.

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HARDWARE DESCRIPTION:

Model **RMS-TA** is a multi-function, real-time, distributed, detection system. The electronics are microprocessor with color LCD display. Plug in modules allow change or addition of functions at a later date, & allow rapid repair by module replacement in the field.

The modular system is covered by both TA's unique exchange warranty system & the full one year warranty.

RMS-TA SYSTEM INCLUDES:

- High Capacity Memory
- High Speed Processor
- 17" LCD Monitors, Keyboard, Mouse
- Data Storage & Archive
- Full Graphics Printer
- Ethernet & USB ports
- **Options:** Solenoid check sources

Data Analysis, Control, Display, Archiving, optional Report Generation

The **FM-9W-Hub** sets Count Times, Alarm Trigger Levels, Alarm Mode (Latching or Non-Latching) & Other Parameters.

All data is automatically displayed, archived & available for graph / trend plotting. **FM-9W-Hub** & the detectors become a complete, user-friendly, 20+ channel, Area-Monitor System capable of handling GM, Scintillation, Proportional, Ion Chambers, & Solid State Detectors for Beta-Gamma and Neutron monitoring.

Data Transmission

For Ethernet based RMS systems with more than 20 Area Monitor Detectors & for systems including other detectors such as Air & Stack Monitors, Liquid Effluent Monitors, etc., the **FM-9W-Hub** serves as an Ethernet node which allows two way data flow to the main **RMS-TA** CPU /server and operators console, even over very long distances.

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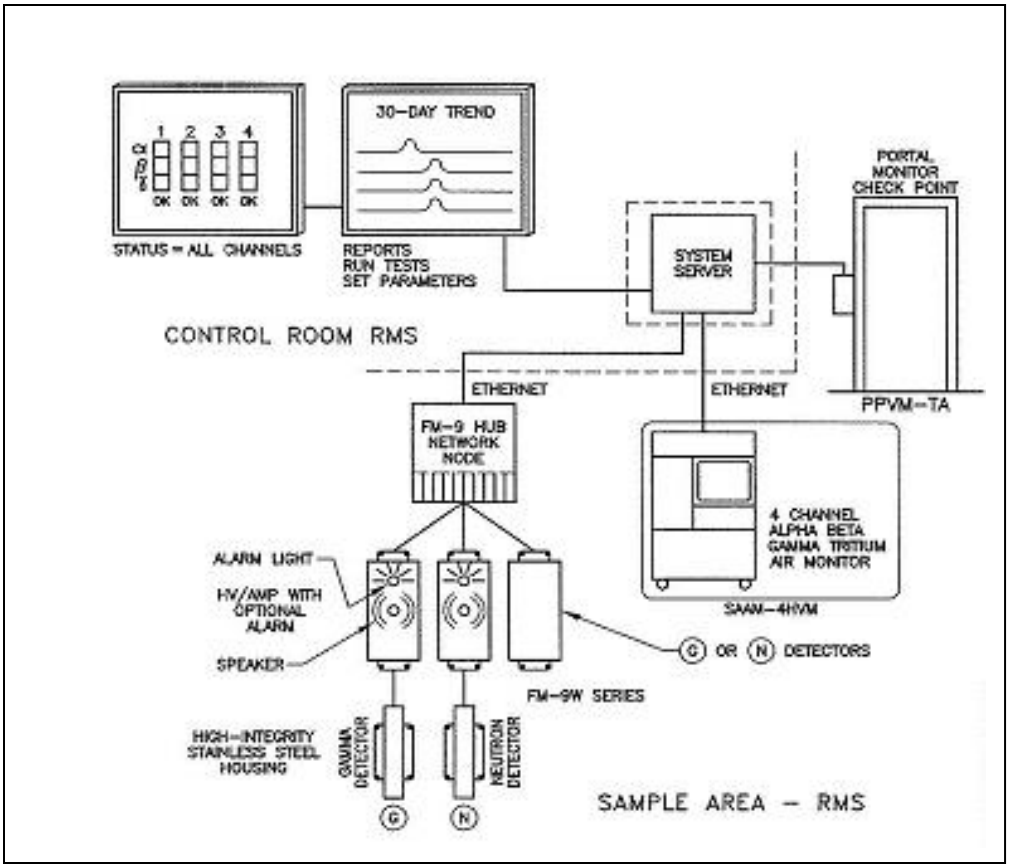

SAMPLE

CONTROL ROOM

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DISTRIBUTED RADIATION MONITORING SYSTEM

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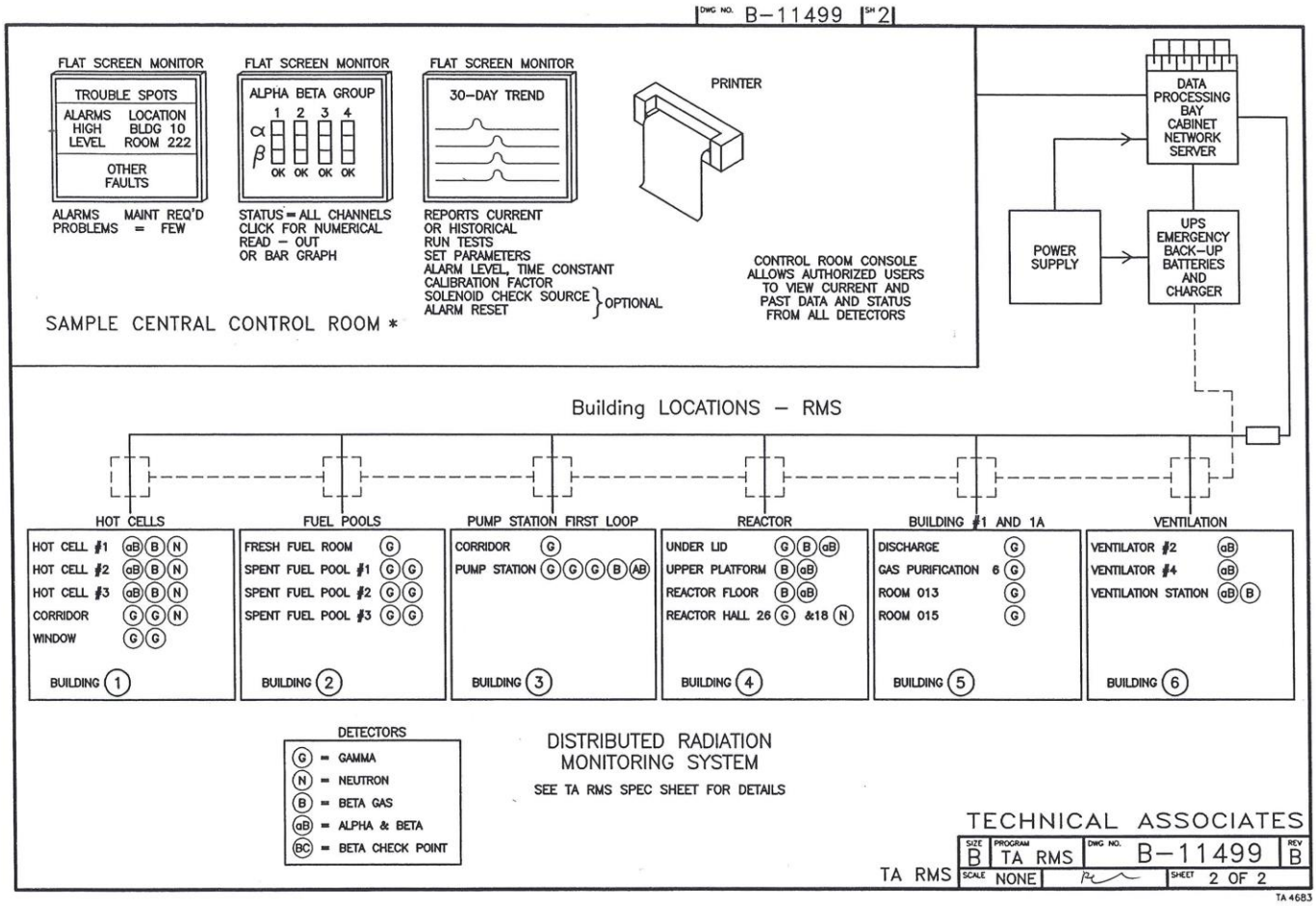

SAMPLE

MASTER CONTROL ROOM

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DISTRIBUTED RADIATION MONITORING SYSTEM

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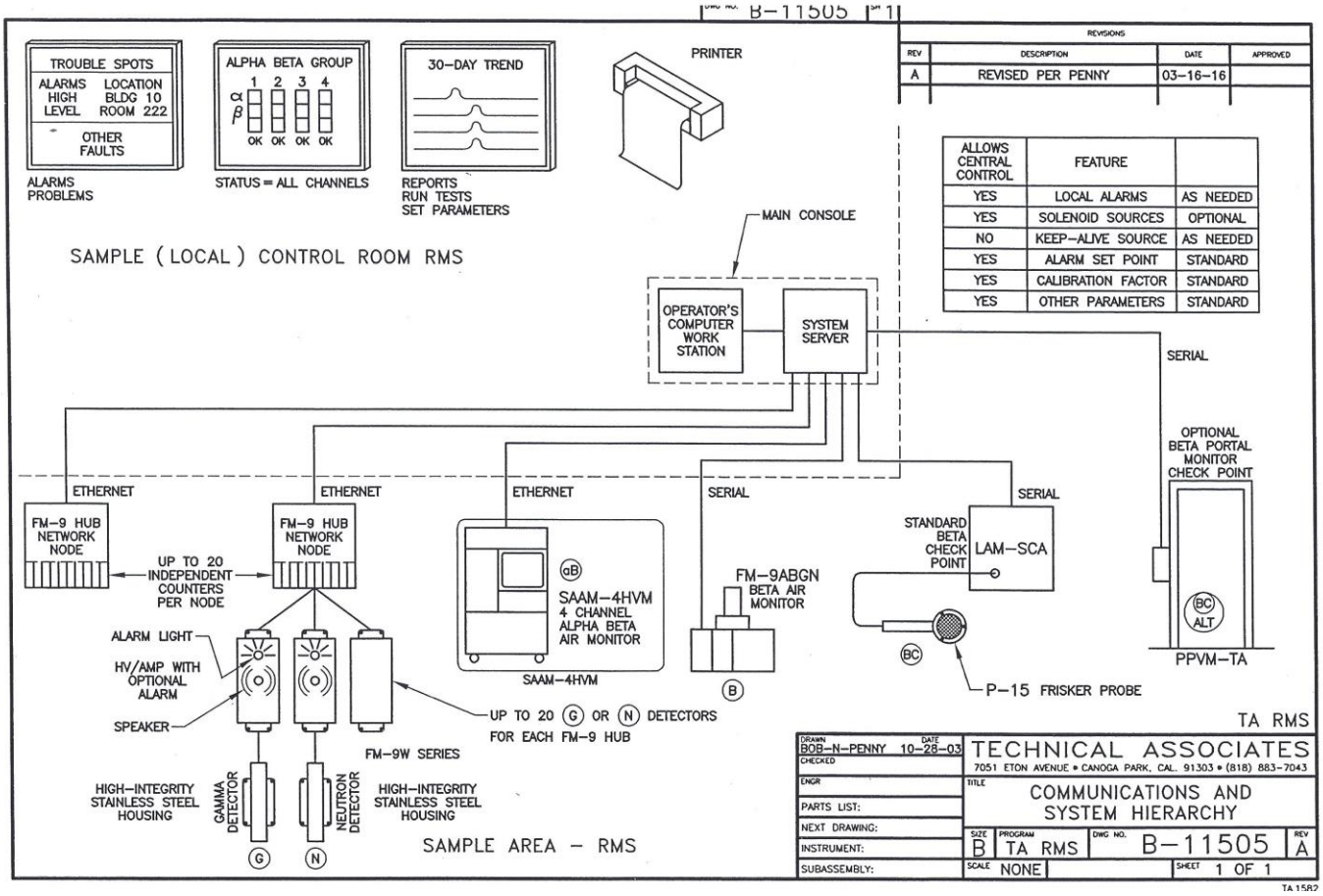

SAMPLE

LOCAL CONTROL ROOM

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LOCAL PORTION OF THE DISTRIBUTED RADIATION MONITORING SYSTEM

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