maintenance records as well as quality assessment features such as audits surveillance, control charts and duplicate sample analyses. Historical or bibliographic data will also be maintained in the database as a ready reference for all users. While all of these features may not be available in the on-site or mobile laboratory, they will certainly be assessable at the off-site facility.

Data Handling Tasks

The database should be adaptable to a variety of tasks ranging from data collection, not only from earlier mentioned inspection results, but from other inspection activities such as process monitoring instrumentation input which might be automatically entered, to sensor and seal data which could be either automatically or manually entered. The inspectors would be expected to be able to retrieve certain data while at the inspection site in order to collaborate on-site analytical results. Similarly, the Technical Secretariat or the National Authority involved may need to recover analytical results or perform statistical manipulation of data contained in the database either during an inspection, as part of Quality Control or as part of their oversight function. In this regard, protection of data is again a concern, whether to protect proprietary or business confidential information or to prevent unauthorized disclosure of any results contained in the database.

Database Operations and Users

The analytical data base will be used in a variety of ways. At the analyst level, comparison to stored reference spectra constitutes one use. In one possible operational mode, infrared and mass spectra would be sorted in separate arrays. The GC retention time would serve as a trigger to search segments of a spectral array for a match to experimental data. Some boundary conditions on retention time would be preset; e.g., =/- 20 seconds, and the spectral arrays would only be searched for compounds falling within those boundaries. Likewise, a floor on GC peak amplitude would also be preset such that only peaks whose amplitude exceeded the floor would trigger a search. The floor would correspond to a predetermined concentration level that was deemed to be significant. The best spectral match would then be displayed along with the experimental spectra for visual comparison by the analyst or inspector. Other information in the database could also be displayed; i.e., physical properties, toxicity, etc.

Inspectors could use the database on location to reference the site history including the declaration, the inspection checklist, prior readings from sensor, seals or process monitoring devices,