interception, export/import information monitoring and analysis of publicly available information, collectively termed intelligence information, are also taken as being potential signatures, in cases where more specific identification methods may not be available.

For declared facilities, the most general identifiers are those that determine the operational/shutdown status, followed by production capacity identifiers and then deviation-from-declared-intent identifiers. For production capacities, diversion signatures indicate only where facility physical changes could be used for production increases or product output modification. Increases in operating duty time, which could, in principle, apply to all facilities except those operating continuously (e.g., gaseous diffusion enrichment facilities), are not identified as signatures. Duty time anomalies are therefore assumed to be be implicitly verified in accountancy anomalies. As with the undeclared facilities, declared facility signatures have not been specifically grouped by type.

4.3.4 Verification Methods

From the identified diversion signatures (Section 4.3.3) a list of appropriate safeguards/verification techniques is provided. These are defined into three generic types of methods, varying from the least to the most intrusive:

- Technical Means (TM), [8]
- Routine Inspections (RI), and
- Special Inspections (SI). [9]

Specific verification techniques corresponding to these groups are listed in the analysis tables.

The Technical Means are non-intrusive methods and comprise reconnaissance satellite systems using either photographic, infrared, radar or electronic sensors, and radar and acoustic systems. Chemical and radionuclide environmental detection and monitoring methods and non-technical intelligence collection and analysis means are also defined as technical means for the purposes of this report. Remotely transmitted information from local sensor monitors (e.g. video camera) is included. A film camera requiring an on-site visit to retrieve and change film would, however, be considered a routine inspection technique. Intelligence information, as defined in Section 4.3.3, is also used in the analysis tables as a Technical Means method.

The Routine Inspection techniques are used as a part of existing, or potential, IAEA safeguards (e.g., on-site surveillance, containment and accountancy) which require the presence of a resident or non-resident inspector, using either off-site or on-site equipment to facilitate inspections using non-destructive or destructive analysis. Sampling, which involves off-site analysis, is considered to be destructive analysis, for example.

The techniques are listed according to the level of information provided. In safeguards diversion-verification terminology, increasing detection detail is defined by the terms gross, partial and small defects, although, as with the diversion signatures, the techniques listed have not been specifically categorized into those groups. The various safeguards accountancy and containment/surveillance verification methods available are very extensive (i.e., measurement types involve bulk, chemical assay and isotopic analysis, facility-specific operational process parameters and various seal type inspections). The specific methods vary considerably,

---

[8] These are also referred to in the literature as National or International Technical Means. For the purpose of this report, the ownership of the verification technique is not a concern.

[9] These are also sometimes referred to as unannounced inspections.