

Regulatory System for Decommissioning

**By Carlton Stoiber
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Main Elements of the Regulatory System

**Fundamental Regulatory Elements for
Safety & Security of Other Nuclear
Activities apply to Decommissioning**

- Regulatory Body**
- Standard-setting**
- Authorization or Licensing**
- Inspection & Assessment**
- Enforcement**
- Public Information**

Independence of the Regulatory Body

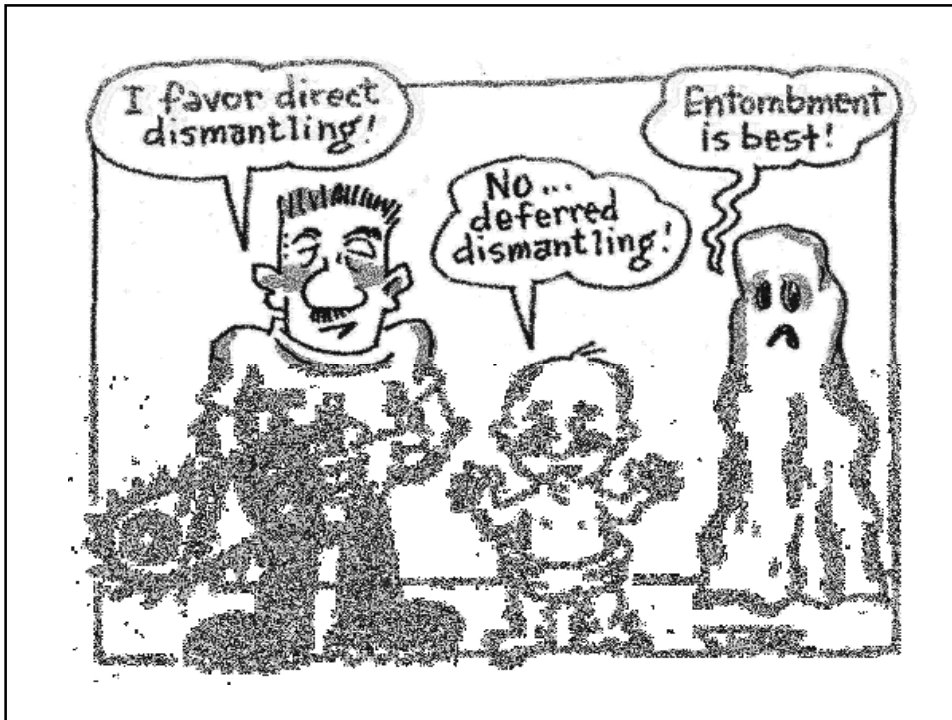
In regulation of decommissioning activities, the Regulatory Body must possess an appropriate degree of independence from other stakeholders, for example, through:

- Institutional Separation**
- Leadership not subject to removal for reasons other than incapacity, malfeasance or incompetence**
- Adequate financial & human resources**
- Reporting and public information authority**
- Decision making on independent basis**
- Process for appeals of adverse decisions**

REGULATORY CONTROL AND THE NATIONAL STRATEGY

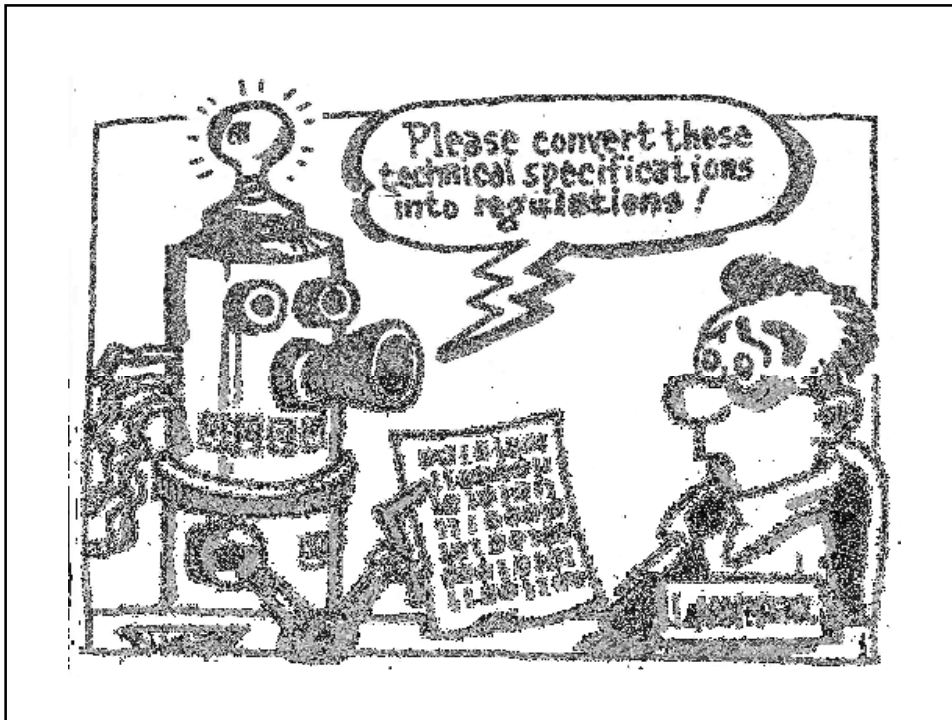
**REGULATORY ACTIVITIES NEED TO
REFLECT THE NATIONAL
DECOMMISSIONING STRATEGY**

- DIRECT OR IMMEDIATE
DISMANTLING**
- DEFERRED DISMANTLING**
- ENTOMBMENT**



STANDARD-SETTING

- IT IS DESIRABLE TO PROMULGATE SPECIFIC REGULATORY REQUIREMENTS COVERING DECOMMISSIONING
- ABSENT SUCH SPECIFIC REQUIREMENTS, EXISTING RADIOLOGICAL HEALTH, SAFETY AND ENVIRONMENTAL STANDARDS SHOULD BE APPLIED
- PARTICULAR STANDARDS NEEDED FOR DECOMMISSIONING CONCERN RADIOLOGICAL CRITERIA FOR THE REMOVAL OF REGULATORY CONTROLS OVER DECOMMISSIONED INSTALLATIONS AND SITES
- STANDARDS ALSO NEED TO COVER RADIOLOGICAL ASPECTS FOLLOWING DECOMMISSIONING



AUTHORIZATION OR LICENSING: BASIC ELEMENTS

**IN COMMON WITH OTHER AREAS OF
NUCLEAR REGULATION THE LAW
APPLICABLE TO DECOMMISSIONING
SHOULD INCLUDE:**

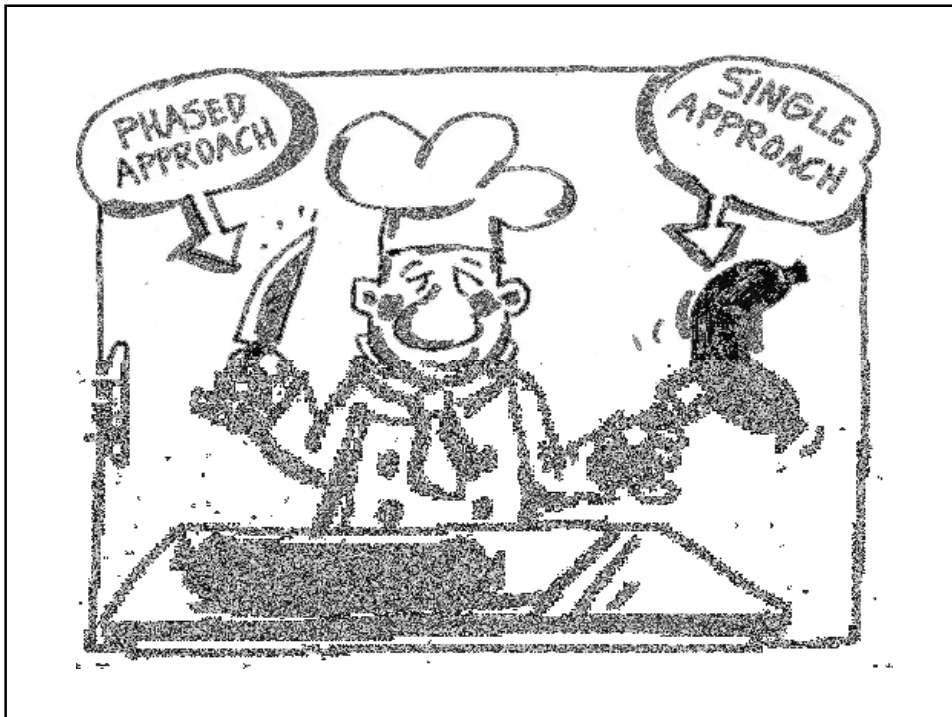
- REQUIREMENT FOR LICENSE(S)**
- LICENSING PROCEDURES**
- PROVISIONS FOR MODIFICATION,
SUSPENSION, REVOCATION OR TRANSFER**
- RESPONSIBILITY OF THE LICENSE-
HOLDER**

AUTHORIZATION OR LICENSING FOR DECOMMISSIONING

**THE AUTHORIZATION OR LICENSING
PROCESS IS THE KEY METHOD FOR
EXERCISING REGULATORY CONTROL
OVER DECOMMISSIONING**

**DEPENDING ON NATIONAL APPROACHES
AND PREFERENCES, TWO BASIC
LICENSING OPTIONS ARE AVAILABLE:**

- SEPARATE LICENSES OR PHASED
AUTHORIZATION**
- SINGLE LICENSE OR AUTHORIZATION**



SINGLE AUTHORIZATION OR LICENSE

- ALLOWS CONSIDERATION OF MULTIPLE ISSUES IN SINGLE PROCEEDING**
- MAY BE MORE EFFICIENT THAN MULTIPLE LICENSING ACTIONS**
- MAY REQUIRE MORE FREQUENT RECONSIDERATION OR REVISION IN CASE OF CHANGED CIRCUMSTANCES**
- MOST SUITABLE FOR DIRECT OR IMMEDIATE DISMANTLING**

PHASED AUTHORIZATION THROUGH SEPARATE LICENSES

- RECOGNIZES THAT DECOMMISSIONING ACTIVITY PROCEEDS THROUGH MANY SEPARATE STEPS, OFTEN OVER LONG TIME PERIODS, EACH REQUIRING CAREFUL OVERSIGHT**
- MOST SUITABLE FOR DEFERRED DISMANTLING**
- PROVIDES MAXIMUM DEGREE OF REGULATORY CONTROL BECAUSE OPERATOR MUST OBTAIN A LICENSE FOR EACH STEP IN THE PROCESS**
- REQUIRES CLEAR PROCEDURES AND CRITERIA FOR EACH LICENSING PHASE**
- CAN IMPOSE DELAY OR BURDENS IF LICENSING ACTIONS ARE NOT TAKEN PROMPTLY (WHETHER CAUSED BY OPERATOR OR REGULATORY BODY)**

PHASES OF DECOMMISSIONING SUBJECT TO PHASED AUTHORIZATION

- APPROVAL OF NATIONAL DECOMMISSIONING PLAN**
- APPROVAL OF FACILITY DECOMMISSIONING PLAN,
INCLUDING FINANCIAL ARRANGEMENTS**
- DECOMMISSIONING-RELATED ACTIVITIES IN
OPERATION**
- FUEL REMOVAL AFTER OPERATION, INCLUDING
INTERIM STORAGE**
- DECONTAMINATION**
- DISMANTLING**
- FINAL RADIOLOGICAL SURVEY**
- SITE RELEASE**
- MANAGEMENT AND DISPOSAL OF RESULTING
WASTES**

INSPECTION AND MONITORING: BASIC ELEMENTS

**IN COMMON WITH OTHER AREAS OF
NUCLEAR REGULATION A LAW ON
DECOMMISSIONING SHOULD INCLUDE:**

- ESTABLISHMENT OF THE INSPECTION
PROGRAMME**
- INSPECTION REQUIREMENTS (ACCESS TO
FACILITIES AND INFORMATION, REPORTS)**
- RESPONSIBILITY OF THE OPERATOR**

INSPECTION AND MONITORING FOR DECOMMISSIONING

INSPECTION AND MONITORING FOR DECOMMISSIONING CAN POSE SPECIAL CONSIDERATIONS

- DIFFERENT PHASES OF DECOMMISSIONING
REQUIRE SPECIAL INSPECTOR QUALIFICATIONS
AND PROCEDURES**
- LONG TIME PERIODS BETWEEN PHASES OF
DECOMMISSIONING MAY REQUIRE SPECIAL
MONITORING PROCEDURES**
- MONITORING AFTER COMPLETION OF
DECOMMISSIONING AND SITE RELEASE CAN POSE
DIFFICULTIES RELATED TO LACK OF LICENSEE
AND CHANGE OF PROPERTY OWNERSHIP**



ENFORCEMENT: BASIC ELEMENTS

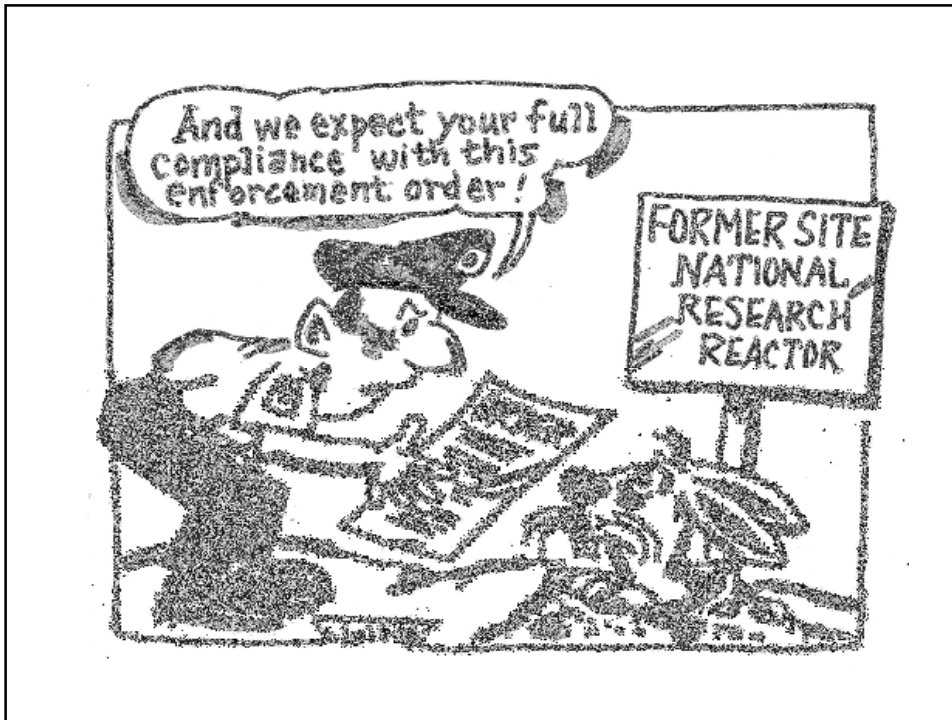
**IN COMMON WITH OTHER AREAS OF NUCLEAR
REGULATION, LAWS ON ENFORCEMENT OF
DECOMMISSIONING SHOULD INCLUDE:**

- ENFORCEMENT PROGRAMME (INCLUDING
IDENTIFICATION OF RESPONSIBLE AGENCIES)**
- ENFORCEMENT PROCESS**
- PROCEDURES FOR ENFORCEMENT BY INSPECTORS**
- IDENTIFICATION OF VIOLATIONS OR OFFENSES**
- GRADED RANGE OF PROPORTIONATE PENALTIES
(ADMINISTRATIVE, CIVIL MONETARY & CRIMINAL)**
- APPEAL PROCESS FOR DISPUTED ENFORCEMENT
FINDINGS OR PENALTIES**

ENFORCEMENT FOR DECOMMISSIONING

**ENFORCEMENT FOR DECOMMISSIONING MAY POSE
SPECIAL CONSIDERATIONS**

- EARLY PHASES CAN BE HANDLED ROUTINELY**
- LATER PHASES (PARTICULARLY AFTER CLOSURE
OR SITE RELEASE) MAY BE DIFFICULT FOR LACK
OF OWNER OR OPERATOR**
- WHERE DECOMMISSIONING IS CONDUCTED BY A
PUBLIC ENTITY, NORMAL ENFORCEMENT TOOLS
MAY BE INEFFECTIVE**



PUBLIC INFORMATION

- BOTH OPERATOR AND REGULATORY BODY MUST IMPLEMENT EFFECTIVE PUBLIC INFORMATION MEASURES**
- IMPORTANT THROUGH ALL PHASES OF DECOMMISSIONING FOR PUBLIC CONFIDENCE AND ACCEPTANCE**
- ESSENTIAL FOR MEANINGFUL PUBLIC PARTICIPATION IN AUTHORIZATION PROCESS**
- ESPECIALLY NECESSARY FOR EFFECTIVE EMERGENCY PLANNING**

REGULATORY ISSUES ON COMPLETION OF DECOMMISSIONING

**WITH REMOVAL OF A FACILITY FROM
ACTIVE REGULATORY CONTROL, THE
FOLLOWING ARE CRITICAL ELEMENTS**

- COMPLETE AND ACCESSIBLE RECORDS
DOCUMENTING THE PHYSICAL AND
RADIOLOGICAL CHARACTERISTICS OF
THE SITE**
- ANY CONTINUING REQUIREMENTS OR
RESTRICTIONS PERTAINING TO THE SITE**
- IDENTIFICATION OF MONITORING
ARRANGEMENTS**

GUIDANCE DOCUMENTS ON REGULATION OF DECOMMISSIONING

- LEGAL AND GOVERNMENTAL INFRASTRUCTURE
FOR NUCLEAR, RADIATION, RADIOACTIVE
WASTE AND TRANSPORT SAFETY, IAEA
REQUIREMENTS DOCUMENT NO. GS-R-1(2000)**
- DECOMMISSIONING OF NUCLEAR POWER PLANTS
AND RESEARCH REACTORS, IAEA SAFETY GUIDE,
NO. WS-G-2.1 (1999)**
- PREDISPOSAL MANAGEMENT OF RADIOACTIVE
WASTE, INCLUDING DECOMMISSIONING, IAEA
SAFETY REQUIREMENTS DOCUMENT, NO. WS-R-2
(2000)**
- HANDBOOK ON NUCLEAR LAW, IAEA (2003)**