

Health Canada  
Santé Canada

Consumer and Clinical Radiation Protection Bureau



Healthy  
Environments and  
Consumer Safety

Noise Control and Impact  
Assessment at Health Canada

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Canada

Canada

Health Canada  
Santé Canada

Consumer and Clinical Radiation Protection Bureau  
HECS

**Noise Control in other Federal Departments  
(some examples)**

CANADA LABOUR CODE PART II –occupational noise in Federally regulated workplaces

- Human Resources and Skills Development Canada, Labour Program in partnership with Transport Canada and the National Energy Board (Health Canada, Memorandum of Understanding with Labour Program)

AERONAUTICS ACT – noise emanating from aerodromes and aircraft – Health Canada (CCRPB) advisor to Transport Canada Aircraft Noise and Emissions Committee

MOTOR VEHICLE SAFETY ACT – exterior and interior noise levels of motor vehicles

- Transport Canada

Canada

Cette présentation a été effectuée le 1er décembre 2004, au cours de la journée « Le bruit : s'entendre sur de nouvelles bases pour un environnement sonore sain, au travail et dans la collectivité » dans le cadre des Journées annuelles de santé publique (JASP) 2004. L'ensemble des présentations est disponible sur le site Web des JASP, à l'adresse <http://www.inspq.qc.ca/jasp/archives/>.



## Noise Control at Health Canada

- *Radiation Emitting Devices Act* controls sale, lease, importation and advertising of devices that emit acoustical radiation
- Health Canada enforces this Act and develops standards for it. Currently no standards for noisy devices.
- Health Canada led development of CSA voluntary national standard *CSA Z107.58- Noise Emission Declarations for Machinery*



## Noise Emission Declarations appear in instructions or technical sales literature (or a label)

- Identification of the machinery
- A-weighted Noise Emission Value
  - Sound pressure level at a work station
  - Sound Power level
- C-weighted peak emission sound pressure level at a workstation (impulsive noise)
- Test code





## Noise Emission Declarations Help Industrial Hygienists to:

- Advise employers to purchase quieter machinery
- Plan noise control strategies
- Ensure compliance with occupational and environmental noise regulations



## Noise Emission Declarations benefit worker and community health and workplace productivity by helping to:

- Reduce noise-induced hearing loss
- Improve communication in the workplace
- Reduce annoyance in workplaces and communities



## Requirements for Noise Emission Declarations

- **European Union:** Machinery Directives for new models
- **European Union:** Outdoor Equipment Directives
- **Canada:** CSA Z107.58-02 Standard: Noise Emission Declaration for Machinery
- **Canada:** CSA Z107.58-02 is being used in noise specs by some buyers



## Supporting ISO/CEN Standards for Noise Emission Declarations (International/European)

- **ISO 11201:** Emission Sound Pressure Levels
- **ISO 3744:** Sound Power Levels (pressure)
- **ISO 9614:** Sound Power Levels (intensity)
- **ISO 4871:** Declaration standard
- **CSA Z107.58-02**
- **Health Canada also has a lead role in Canadian input to short and long term projects to improve the ISO standards**
- **Research program, Working Group member and Chair of Canadian Advisory Committee**



## Noise Control at Health Canada

- On-site occupational noise control in Federally regulated workplaces under *Canada Labour Code, Pt II* and Treasury Board Occupational Safety and Health Directives and Standards (Workplace Health and Public Safety Programme + CCRPB)
- Toys that emit noise exceeding 100 dB are prohibited in Canada under the *Hazardous Products Act* (Consumer Product Safety Bureau + CCRPB)
- *It's Your Health* informs the public about reducing the risk of noise-induced hearing loss from consumer items.



## Noise Impact Assessment at Health Canada

- Under the *Canadian Environmental Assessment Act* certain projects with Federal Government involvement must undergo an environmental assessment.
- A project may not proceed if it is likely to cause significant adverse environmental effects, after mitigation is accounted for. This important judgment by the Responsible Authority requires expert input from other Federal Departments.
- Health effects from project-related noise are considered environmental effects (Environmental Health Assessment Services + CCRPB).



## Develop *National Guidelines for Environmental Assessment: Health Impacts of Noise*

### INCREASE EFFICIENCY

- number of assessments increased considerably;
- noise sources: aircraft (civilian and military), rockets, rail, highways, wind turbines, gas pipeline compressor stations, construction and industrial;

### INCREASE TRANSPARENCY

- wide variation in information and analyses used to assess health impacts of project-related noise;

The Federal-Provincial document, *National Guidelines for Environmental Noise Control*, do not address these problems and parts are out of date.



## How should health impacts be assessed?

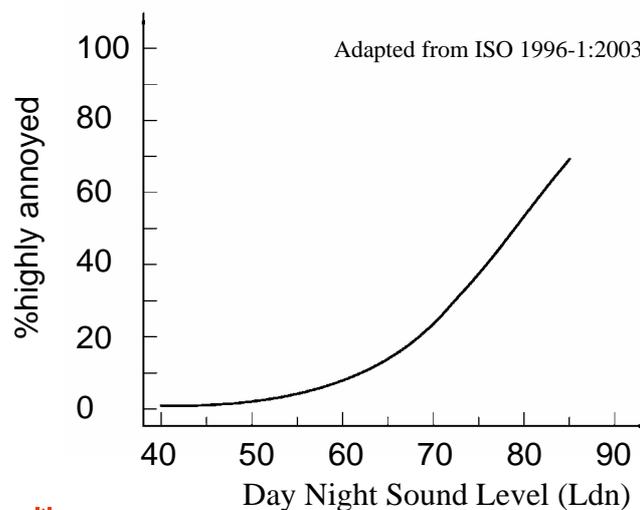
### GENERAL

- direct and cumulative effects on human health, *i.e.*, physical, mental and social well-being;
- health effects: (i) adverse, (ii) significant and (iii) likely;



## How should health impacts be assessed?

- Compare existing quality of noise environment (baseline) to after the project is in place
  - Characterize noise environments through noise measurement and/or modeling.
  - Use noise levels, dose response relationships and community consultations to estimate changes in health endpoints due to the project.
  - Compare noise levels or changes in levels according to a synthesis of Provincial and international guidelines, standards or policies.





## Highway Project – Suggested SEVERE IMPACT

Change in %highly annoyed  $\approx$  6.5% ; Ldn > 75 dBA

Existing Ldn (dBA)	Final (with Project) Ldn (dBA) SEVERE IMPACT
50	61
60	65
70	73
75	75+



## Health Impacts: Important Issues

### Noise and sleep; Noise and stress

- Health Canada research collaborations with the University of Ottawa.

### First Nations people

- No guidelines for noise impacts on cultural and ceremonial activities

### Susceptible populations

- WHO Guidelines



## Proposed National Guidelines for Environmental Assessment: Health Impacts of Noise

### SHOULD INCLUDE:

- Criteria, methodologies and rationales to determine whether project-related noise is likely to cause significant adverse health effects.
- Checklist so that proponents know basic information needed for an environmental noise assessment, suggested criteria levels to be targeted and guidance for mitigation

### PROCESS

- Working group, stakeholder review and comment
- Ideally, representation from Federal, Provincial, Territorial stakeholders, major proponents, major communities, including First Nations

### SUFFICIENT NOISE EXPERTISE



## Noise control and impact assessment at Health Canada

- Regulation (noisy devices in general, toys and occupational noise in federally regulated workplaces)
- Research and development of voluntary standards (machinery)
- Research and advice on the health impacts of noise for environmental assessments, aircraft noise regulation, advisor to other Federal Departments/Agencies, inform the public
- Information and education for the public for protection from noisy consumer items and environments.