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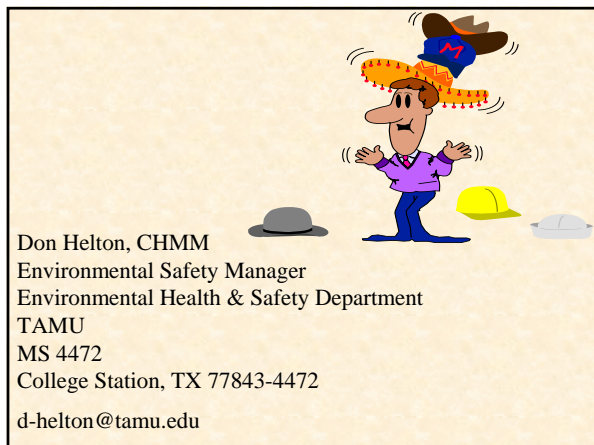
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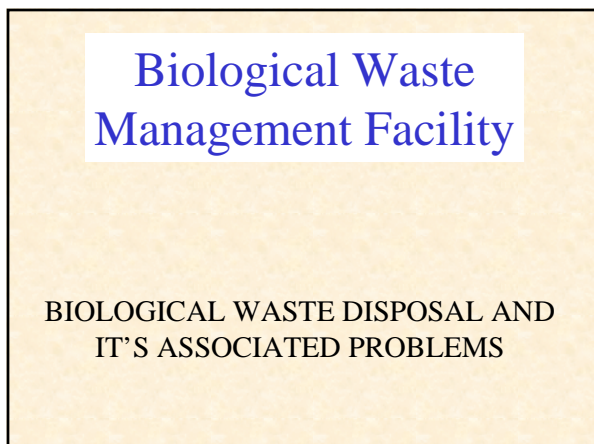
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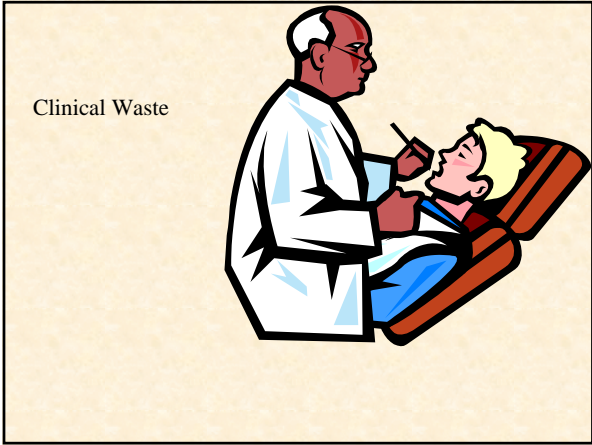
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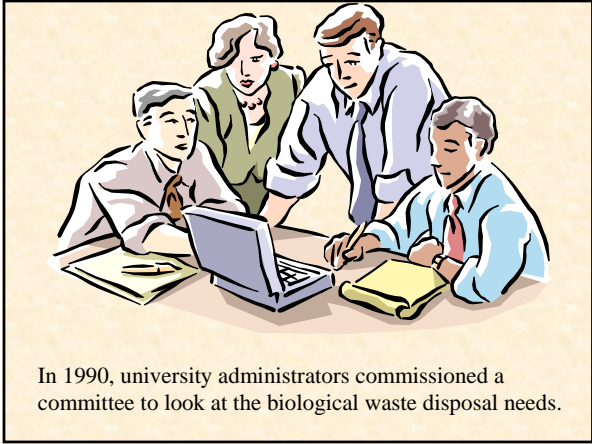
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In 1990, university administrators commissioned a committee to look at the biological waste disposal needs.

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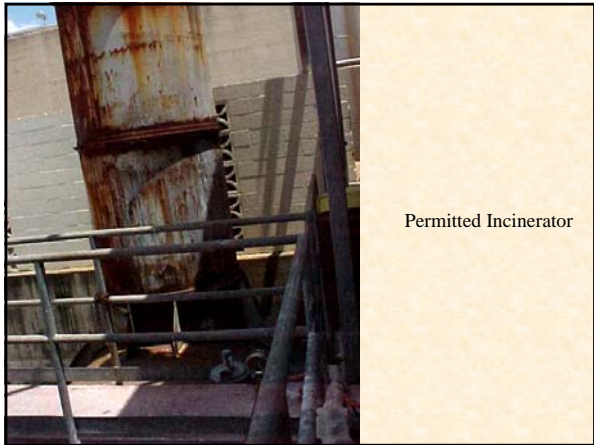
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Permitted Incinerator

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"Grandfathered" Incinerator

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In 1996, the committee was revitalized and new members were added.



### FACTORS PUSHING TAMU TO A DECISION

- Rendering plants closing their doors.
- Disposal permits for putting certain pathological waste into landfills.
- TCEQ canceled the “Grandfathered” point sources.
- Increasing volume of biological waste.

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### TAMU’S DECISION

- New Biological Waste Management Facility (BWMF)
  1. Offices
  2. Laboratory areas
  3. Necropsy area
  4. Cold storage
  5. Disposal equipment



- Complications and delays
  1. Building Design
  2. Disposal equipment
  3. Permitting

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### DESIGN PHASE

- ❖ Educating Architectural /Engineering Firms
- ❖ Design Criteria
- ❖ Clients
- ❖ Building Equipment
- ❖ User Indecision



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### DISPOSAL EQUIPMENT



Incineration -  
proven technology

Biodigestion -  
unproven technology

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### AGRILIZER



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### PERMITS REQUIRED

- ❖ New Source Review
- ❖ Air Operating Permit
- ❖ Solid Waste Operating Permit
- ❖ Landfill Permit



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PERMITTING ISSUES

- ❖ Using Engineering firm not located in the state of Texas and inexperienced with Texas air and solid waste permitting regulations.
- ❖ TCEQ's permitting personnel unfamiliar with the biodigester technology.
- ❖ TCEQ's regulatory interpretations.

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PERMITTING ISSUES

- ❖ TCEQ's decision to regulate our pathological incinerator as a medical incinerator.
- ❖ Final air permit required either the limited use of the incinerator and the materials to be incinerated or put a continuous emissions monitoring system (CEMS).
- ❖ TCEQ's Municipal Solid Waste Permit – Type V

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CONSTRUCTION ISSUES

- ❖ Air permitting process resulted in a three-month delay in starting construction.
- ❖ Multiple change orders issued to the contractor.
- ❖ Digester was purchased by another government agency.

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❖ Digester was delivered in one piece weighing 18,000 pounds when we specified it could not exceed 15,000 pounds.



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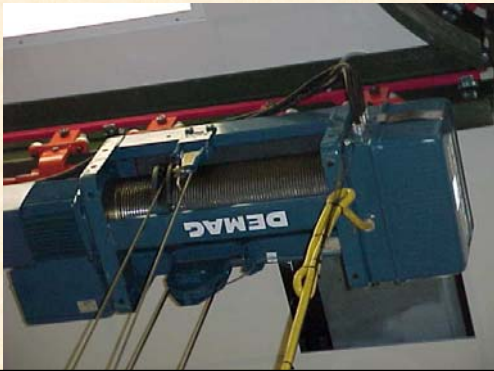
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❖ Pair of overhead cranes designed to lift 15,000 pounds.



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❖ CEMS for incinerator was not in original bid specifications.

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**Conclusions Drawn and Lessons Learned**

- ❖ During a project like this, keep in the loop with all correspondence between individuals involved in the project.
- ❖ If monthly construction updates are held with contractor, make sure EHSD representatives attend.
- ❖ Projects of this size and complexity can handicap you immensely in handling your normal duties at your institution.

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Conclusions Drawn and Lessons Learned

- ❖ For permits, use engineering firms that know and have experience with the permitting regulations and preferably, have an office in the state where the permit will be issued.
- ❖ Early in the permit process, find if other institutions have had to handle the same problems.
- ❖ Contact the regulatory agency early about all possible permits.

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Conclusions Drawn and Lessons Learned

- ❖ Keep yourself fully involved in the permitting process from the beginning to the end. Do not get caught having to come into the permitting process at a late date.
- ❖ Remember, keep in contact with regulators during permit process even though the engineering firm is handling the permit; you will probably have oversight for permit compliance.

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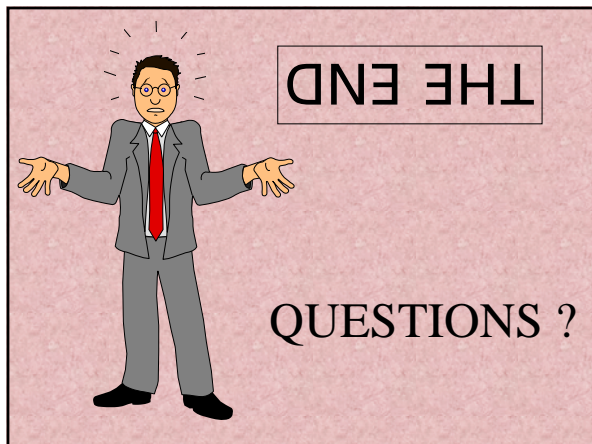
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