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**Description Notes** Text and slide descriptions for a slide show describing the Binghamton State Office Building clean-up from the beginning through current progress. Text at the end discusses future plans. Slides are missing.

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STATUS REPORT SLIDE PRESENTATION FOR JUNE 7, 1983  
MEETING OF THE EXPERT ADVISORY PANEL ON THE  
BINGHAMTON STATE OFFICE BUILDING.

<u>TEXT</u>	<u>SLIDE #</u>	<u>SLIDE</u>
BSOB- built 1972, 18 stories, basement, sub-basement	1	Binghamton Governmental Plaza
FIRE- February 5, 1981 in basement mechanical room destroyed switch gear and caused PCBs to leak from one of the transformers	2	Burned out switchgear
SOOT- generated by fire, spread from mechanical room up men's room ventilating chase.	3	Drawing of floor plan
The soot spread from the ventilating chase into the space between the false ceiling and the structural ceiling on each floor, and from there into the men's room,	4	Men's restroom ceiling and tile wall
out into the central core of the building,	5	Elevator lobby
into the office space	6	Office area
and onto all of the furniture and other equipment	7	Desk
FIRST RESPONSE- restore power to the building; remove worst of the contamination. Stopped after about one month when the Department of Health reported the presence of dioxins and dibenzofurans in the soot. The Department of Health will be reporting later today on their medical surveillance of the people who were involved in this first month of the cleanup.		
The building was shut from March 1981 to February 1982 while arrangements were made to assure the health and safety of the cleanup workers and the surrounding community. Work completed during this time included	8	Title slide
the construction of an entry portal which provides safe access to the building.	9	Entry portal
Provisions have been made to assure security through full time guards and worker ID cards.	10	Guard desk

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<u>TEXT</u>	<u>SLIDE #</u>	<u>SLIDE</u>
All personal clothing is placed in lockers	11	Lockers
All clothing a protective equipment that is used in the building is supplied by the health and safety office	12	Man in Tyvek suit.
The working environment is monitored by monthly air samples	13	Air sampling.
and wipe samples in the building and in the entry portal.	14	Wipe sampling round table
Comprehensive medical survillance of the workers will be described today by Dr. Chase.		
The protection of the community is assured by the filtration of all of the air that leaves the building through particulate and activated carbon filters.	15	Schematic of APC unit.
Two of these air pollution control units were installed on the roof of the building and connected through the penthouse to the exhaust chases from the men's room and women's room on each floor. These units change the air in the building about once each day.	16	APC unit.
The proper operation of the air units is monitored by an alarm system that is connected to a panel in the security office of the entry portal.	17	Alarm panel
The proper performance of the air pollution control units is assured by periodic testing	18	HYVOL APC sampler.
using several different types of sampling equipment.	19	Sampling train.
All of the water generated in the building, including the condensate from the air conditioning coils, is stored in pools in the sub-basement and then treated to remove all contaminants before being released to the city sanitary sewers.	20	Storage pool.

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<u>TEXT</u>	<u>SLIDE #</u>	<u>SLIDE</u>
Samples from both the air pollution control system and the water treatment system are analyzed by gas chromatography to assure that the cleaning of the building is not releasing contaminants from the building.	21	Gas chromatograph.
In February, 1982, the preparations to assure safe operations were in place, and work started on the preliminary cleanup. The objective has been to remove all visible soot from the building.	22	"CLEANUP"
All paper and small items were taken to the sub-basement	23	Loaded fork lift truck
where records were made of each load,	24	Chalk board
small items were compacted into drums,	25	Drum compactor
and papers were shredded and baled.	26	Shredder.
Bales of paper, drums, and plastic bags of miscellaneous items were loaded into a plastic lined roll-off bin.	27	Loading bags into bin.
The bin was washed before being removed from the building and hauled by truck to an approved landfill where the contaminated material was disposed.	28	Washing bin.
A number of different cleaning materials were tested in order to determine the best way to remove the soot.	29	Washing floors.
A special tool was developed to taking wipe samples	30	Wipe test tool
and the test program was carefully defined. It was found that a solution of the industrial detergent Triton X-100 in water gave the best results.	31	Sampling matrix.
The first step in the preliminary cleanup was to cut access holes into the contaminated areas above the suspended plaster ceilings.	32	Man on ladder.
All of the hidden areas have been vacuum cleaned	33	Head and vacuum nozzle.

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<u>TEXT</u>	<u>SLIDE #</u>	<u>SLIDE</u>
including the upper surfaces of the suspended plaster ceilings,	34	Crew on ceiling
and the sprayed-on fire-proofing insulation on the structural ceilings	35	Man on ladder
and on the structural steel.	36	Vacuum cleaning steel beam.
The main air return shafts have also been vacuum cleaned	37	Workers tied off to safety lines.
including the hidden areas.	38	Man on knees.
The elevator shafts have also been vacuum cleaned.	39	Man vacuuming block wall.
In the office space, the ventilating ducts have been vacuum cleaned	40	Man with vacuum wand.
and the suspended ceilings have been disassembled. The lighting fixtures and the panels have been stored in the sub-basement.	41	Scaffolds.
The supporting grid for the ceiling has been washed	42	Man on scaffold with bucket.
as have the remaining lighting fixtures,	43	Top of lighting fixture
the foil insulation on the air ducts	44	Washing foil insulation
the inside of the ducts	45	Washing duct
and the air conditioning equipment.	46	Washing air conditioning unit.
All other hard surfaces have also been washed including		
toilet fixtures,	47	Washing toilets.
walls, and floors	48	Washing wall.
We have now completed the preliminary cleanup in all areas above the basement.	49	Cleaned office space
Considerable testing has been done to determine how clean the building is.	50	"RESEARCH SUPPORT"
Air samples have been collected for both PCBs and the other chemicals.	51	Small air sample tube.

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<u>TEXT</u>	<u>SLIDE #</u>	<u>SLIDE</u>
Samples have been taken in duplicate with the high volume air samplers to check the repeatability of the measurements	52	Air sampling: 2 large samplers
and PCB samples have been collected at a number of different locations to assure that the air quality is the same throughout the building.	53	Single small air tube.
The results from the most recent air samples will be presented by Dr. Eadon.		
Large wipe samples have been collected from vinyl walls. The wipe pads were extracted and analyzed for PCBs and other chemicals. Dr. Ronan will present the results of the most recent analyses of wipe samples from the vinyl walls and of samples of the sprayed-on fire-proofing insulation.	54	Extraction glassware.
Cleaning work has continued since the first phase of the preliminary cleanup was finished.		
Tests showed that the vinyl floors were still contaminated at much higher levels than other surfaces after cleaning,		
and so the vinyl floor tile	55	Removing vinyl tile
has been removed and disposed of	56	Scraping off vinyl tile.
The ceramic floor tile in the restrooms has also been removed.	57	Man with chipping hammer.
The lighting fixtures and painted metal ceiling panels that were stored in the sub-basement are being washed and moved to a clean storage area on the 4th floor.	58	Washing lighting fixture.
The portion of the building above the basement is being sealed off to prevent recontamination.	59	Hanging plastic sheet.

----- LIGHTS ON -----

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IN ORDER TO COMPLETE THE CLEANUP, WE NEED YOUR GUIDANCE IN A NUMBER OF AREAS.

WE WOULD LIKE TO RESUME NORMAL VENTILATION OF THE OFFICE FLOORS SO THAT WE CAN CLEAN WITH SOLVENTS AND APPLY PAINTS AND COATINGS AS NEEDED TO REDUCE THE CONTAMINATION OF ACCESSIBLE SURFACES. SOLVENTS CANNOT BE USED AT PRESENT BECAUSE THE SOLVENT VAPORS WOULD EXHAUST THE ACTIVATED CARBON IN THE AIR POLLUTION CONTROL UNITS. DETAILED CALCULATIONS HAVE SHOWN THAT AIR RELEASED FROM THE 6th AND 14th FLOOR VENTILATING GRILLS WILL BE DILUTED AT LEAST 200 TIMES BEFORE IT REACHES THE PLAZA DECK OR THE ADJOINING BUILDINGS.

HOW CLEAN MUST THE AIR BE BEFORE WE CAN RELEASE IT FROM THE BUILDING?

THE FINAL CLEANUP MUST HAVE DEFINED MEASURABLE GOALS.

HOW CLEAN MUST THE AIR BE BEFORE WORKERS CAN BE ALLOWED TO WORK IN THE BUILDING WITHOUT RESPIRATORS?

THE FLOORS WILL BE REPLACED, PAINTED WALLS REPAINTED, AND OFFICE FURNITURE THOROUGHLY CLEANED OR REPLACED. HOW CLEAN MUST THE REMAINING SURFACES BE MADE BEFORE THEY ARE CLEAN ENOUGH FOR NORMAL USE OF THE BUILDING.

I NOW TURN THE PROGRAM OVER TO THE SCIENTISTS WHO WILL PRESENT DATA ON THE TOXICITY OF THE CONTAMINANTS AND THE PRESENT LEVEL OF THE CLEANLINESS OF THE BUILDING. ALTHOUGH YOU WILL BE ASKED TO COMMENT ON THIS TECHNICAL WORK, THE BOTTOM LINE QUESTION REMAINS "HOW CLEAN IS CLEAN ENOUGH?"