Clean Air Madison
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Madison, WI 53704
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May 4, 2001

Ms. Christine Todd Whitman
USEPA Administrator
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

RE: Submission of Title V Petition
Issuance of an Air Quality Operation Permit
Madison-Kipp Corporation
Madison, Wisconsin

Dear Ms. Whitman:

The Wisconsin Department of Natural Resources (WDNR) is preparing to issue an air quality Title V Operation Permit #113014220-P01 to Madison-Kipp Corporation (MKC) in Madison, Wisconsin. USEPA Region 5 did not object to the issuance of this permit during its 45-day review period which ended March 16, 2001.

MKC operates an aluminum foundry and die casting operations in our densely populated neighborhood. Concerned neighborhood residents and Clean Air Madison (CAM), which has represented the interests of residents concerned about the uncontrolled discharges from this foundry, have combined our expertise and resources to develop the enclosed petition. We are submitting the petition as allowed under 40 CFR Part 70.8(d) and request a review of this permit by USEPA. It is being filed within the 60-day period following the end of the review of Region 5.

The draft operation permit for MKC was issued by the WDNR on November 18, 1999. Extensive comments were submitted by neighborhood residents during the public comment period and December 21, 1999 public hearing. The comments and objections to the Title V operation permit raised in the enclosed petition are similar to those previously submitted to the WDNR and USEPA for consideration prior to issuance of the final operation permit.

Please note that with this petition we have included a video tape and transcript of the December 21, 1999 public hearing held for the pending Title V operation permit. This well-attended hearing reflects the concerns raised by residents over the uncontrolled air pollution released into our neighborhood.

We respect MKC's long history, and appreciate the employment and support for local charities this company provides within the community. However, this foundry has grown too large to be able to discharge uncontrolled air pollution into the neighborhood. The pending Title V operation permit allows the facility to continue to operate without controlling its emissions, to discharge large quantities of air pollution into a densely populated area, and ignores the foundry's immediacy to our residential neighborhood and community schools. **A Title V operation permit should not be issued until it assures protection of the air quality in our neighborhood.**

We believe there are sufficient grounds for USEPA to grant our petition and object to issuance of the operation permit. Major deficiencies of the operation permit are as follows:

- Failure to demonstrate compliance with the MACT air pollution control requirements for secondary aluminum processing plants which would require a 95% reduction in hydrogen chlorine flux emissions from the aluminum furnaces;

- Failure to demonstrate compliance with the national ambient air quality standards.

- Failure to recognize the facility as a major source and subject construction permits submitted during the period of the Title V permit application review to the requirements of the Prevention of Significant Deterioration air quality regulations;

- Failure to obtain accurate emissions and stack parameter data to allow an accurate demonstration of compliance with emission limitations and air quality standards; and,

- Failure to follow the goals of the USEPA Environmental Justice Program and assure our neighborhood enjoys the quality of life provided residents in other areas of the community, state and country.

While we do not have the same resources available to the MKC or WDNR, we have attempted to provide sufficient information to demonstrate the Title V operation permit should not be issued. Residents who have prepared this petition include those with expertise in environmental engineering, chemical engineering, and environmental toxicology.

As MKC has grown so has its discharges into our neighborhood, exposure of residents to its air pollution, and complaints to city and state agencies. Residents hope that a thorough review of the pending operation permit will bring much needed relief. Thank you for the opportunity to receive an independent evaluation of this Title V operation permit. Please contact us if you have any questions during your review of this petition. It would be appreciated if a member of your staff contacted us via telephone or email at Rwroang@cs.com to confirm receipt of this petition.

Sincerely,

Rachel Roang

Anne Chacon

James Powell

Jen Voichick

Maria Powell, M.S.

Jane Eiseley

Emma Czarapata

Steven Klafka, P.E.

Robert Moore, Ph. D.

Jay Roberts

Enclosure

Michael Farin

Alex Converse, Ph. D.

cc: Lloyd Eagan, Director
WDNR Bureau of Air Management

Bharat Mathur, Director
EPA-Region 5, Air & Radiation Div.

Mayor Susan Bauman

PETITION REQUESTING THAT THE ADMINISTRATOR OBJECT TO ISSUANCE OF TITLE V OPERATION PERMIT #113014220-P01 BY THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES TO MADISON-KIPP CORPORATION (May 4, 2001)

BACKGROUND

Madison-Kipp Corporation (MKC) has operated on the near east side of Madison, Wisconsin for over 100 years. During this time, its operations have grown substantially, adding new processes, incorporating the use of chlorine fluxing, and increasing production. The foundry is surrounded by a diverse residential neighborhood with foundry buildings adjacent to residential properties. Foundry roof vents are level with the roof tops of nearby homes. Schools are located within one block of the foundry. There is no buffer area to shield neighborhood residents from the noise and air pollution generated by the foundry. The Risk Management Plan for MKC chlorine storage concludes that an accidental release of chlorine would affect over 16,000 people.

With growth of the MKC operations, there has been an increasing number of complaints submitted to public agencies. The City of Madison, Department of Public Health is currently responding to a request by neighborhood residents for a study to evaluate numerous complaints related to public health in the area.

In 1999, an odor survey of neighborhood residents was conducted by the Wisconsin Department of Natural Resources (WDNR). Citizens reported sleeplessness, headaches, nausea, and other ailments as a result of exposure to odors they attribute to MKC. Some reported the need to stay indoors, to close windows, or to limit outdoor activities due to the MKC emissions.

WDNR files contain hundreds of complaints by area residents and WDNR staff as well, documenting adverse health effects and objectionable odors from MKC. These complaints include a wide range of symptoms including strong and unpleasant smells; nausea and vomiting; shortness of breath; chest constriction and pain; headaches; sore throats; runny noses and eyes; stinging and irritation of mucous membranes and skin; speeding, pounding and irregular heartbeats; cramps; diarrhea; asthma; miscarriage; and, cancer.

Public records and the experience of neighborhood residents and regulatory staff, clearly demonstrate that the MKC foundry has grown too large to be allowed to discharge uncontrolled air pollution into the neighborhood.

The following figures are provided to show the MKC foundry location within our neighborhood. It is apparent that local parks, schools and homes are located near the foundry roof vents and stacks used to discharge its emissions which will be approved under the Title V operation permit.

Figure 1 shows the location of the MKC foundry on a local USGS map. Nearby schools include St. Bernard's to the west and Lowell Elementary to the south east. Elmside Circle Park lies directly south of the main foundry building.

Figure 2 is an aerial photograph which shows the neighborhood homes surrounding the MKC foundry. Residential properties on Waubesa and Marquette Streets are adjacent to the foundry buildings.

Figure 3 shows Marquette Street homes located adjacent to the foundry buildings. The backyards of adjoining residences begin at the foot of the MKC foundry buildings. The roof tops of adjacent homes are nearly in line with the MKC roof vents exhausting die lube and casting emissions. Residents of these homes are directly exposed to uncontrolled discharges from roof vents or fugitive emissions from windows, doors and openings which provide little if any dispersion.

Figure 4 shows the proximity of Circle Park just south of MKC foundry stacks. This is a common meeting place for neighborhood families.

Figure 5 is a photograph of the MKC foundry taken at Lowell Elementary School. Because the MKC is located on low ground and the school is located on top of a hill, the height of the foundry roof vents are essentially at the same height of the school second floor windows.

Figure 6 shows photographs of chlorine warning signs in the backyard of a home adjacent to the MKC foundry. These signs were necessary when MKC modified its operations in the 1990's to began using chlorine to remove process aluminum scrap. The MKC risk management plan concludes that 16,000 area residents would be affected by an accidental release of its chlorine from the storage and handling equipment. Immediately affected would be those residents with homes adjacent to the foundry buildings.

During the processing of the Title V operation permit and recent air quality construction permits, the foundry has taken every opportunity to avoid controlling its discharges to the neighborhood:

- The recently promulgated MACT requirements for secondary aluminum processing have been avoided through the faulty assumption that only clean scrap will be melted and by ignoring the presence of organic die cast lubricants throughout the foundry.

- The PSD requirements have been avoided for three recent construction permits by failing to designate the foundry as a major source and recent permits as major modifications.

- Issuance of the Title V operation permit relies heavily on dispersion, rather than control, using modeling analyses which assumes the foundry is located in a flat, rural area, and fails to consider the elevated, urban topography and presence of adjacent homes.

Considerable money has been saved by the foundry due to its decision not to relocate to a more appropriate area, and avoidance of air pollution control systems for over 100 years. These funds should be used to assure the MKC foundry protects the air quality of surrounding residents. The Title V operation permit should not rubber stamp the poor judgement that has allowed the foundry to continue to discharge uncontrolled emissions into the surrounding neighborhood.

Figure 1 - Location of Madison-Kipp Corp. on Local USGS Map

Figure 2 - Neighborhood surrounding Madison-Kipp Corp. Foundry. (Aerial Photograph)

Figure 3 - Marquette Street Homes Adjacent to the MKC Foundry (Photograph)

Figure 4 - Looking at MKC Foundry from Circle Park (Photograph)

Figure 5 - Looking at the MKC Foundry from Lowell Elementary School (Photograph)

Figure 6 - Chlorine warning signs in the backyard of a home adjacent to the foundry (Photograph)

INTRODUCTION

The Wisconsin Department of Natural Resources (WDNR) is preparing to issue Title V Operation Permit #113014220-P01 to Madison-Kipp Corporation (MKC) in Madison, Wisconsin. USEPA Region 5 was provided a 45-day period to review a draft of this permit and its supporting documents. This review period ended on March 16, 2001 and Region 5 did not object to issuance of the permit. Reviewing the draft permit on behalf of Region 5 was Ms. Susan Siepkowski, Telephone number: (312) 353-2654, Email: Siepkowski.Susan@epamail.gov . Reviewing the permit application and preparing the permit on behalf of the WDNR is Mr. Brad Pyle, Telephone number: (608) 273-5604, Email: PyleB@mail01.dnr.state.wi.us .

MKC operates an aluminum foundry and die casting operations in our densely populated neighborhood. Concerned neighborhood residents and Clean Air Madison (CAM), which has represented the interests of residents concerned about the uncontrolled discharges from this foundry, have combined our expertise and resources to develop the enclosed petition. We are submitting a petition as allowed under 40 CFR Part 70.8(d) and request a review of this permit by USEPA. We are filing this petition within the 60-day period following the end of the review of Region 5.

The draft operation permit for MKC was issued by the WDNR on November 18, 1999. Extensive comments were submitted by neighborhood residents during the public comment period and December 21, 1999 public hearing. The comments and objections to the Title V operation permit raised in the enclosed petition are similar to those submitted to the agency for consideration prior to issuance of the final operation permit.

To support this petition, we have enclosed the following supporting documents and materials:

Attachment 1 - A video tape and transcript of the December 21, 1999 public hearing for the Title V operation permit. This documents numerous resident concerns regarding the discharges from the MKC foundry.

Attachment 2 - Copies of newspaper articles and neighborhood flyers which demonstrate the concern of residents over MKC operations and discharges approved by the Title V operation permit.

Attachment 3 - Copies of a petition signed by numerous neighborhood residents requesting that the Wisconsin Department of Natural Resources require MKC to include pollution control equipment technology on present and future emissions, and that appropriate filters be used to reduce chlorine gas, hydrochloric acid, particulate and die lube emissions before any permit be approved.

Attachment 4 - Copy of a summary of the 1999 odor survey of neighborhood residents conducted by WDNR staff. This summarizes many of the health effects residents clearly associate with odors from the MKC foundry.

Attachment 5 - Draft Title V Operation Permit #113014220-P01 provided to USEPA Region 5.

Attachment 6 - WDNR technical support document dated November 18, 1999 for Title V Operation Permit #113014220-P01 .

Attachment 7 - WDNR Memorandum dated November 16, 2000 which responds to public and

USEPA Region 5 comments on the draft Title V Operation Permit #113014220-P01. Many concerns and comments submitted by neighborhood residents have not been addressed.

Attachment 8 - USEPA Region 5 letter dated February 16, 2000 to the WDNR explaining that:

1) pending construction permits are circumventing the new source MACT requirements; and,
2) the Title V operation permit should be reproposed to include new construction permits.

We believe there are sufficient grounds for USEPA to grant our petition and object to issuance of a Title V operation permit to MKC. Major deficiencies of the operation permit are as follows:

1. Applicability of Secondary Aluminum Processing MACT
2. Inaccuracy of the Air Quality Impact Analysis
3. Lack of Public Review of Final Operation Permit
4. Applicability of the PSD Regulations
5. The Question of Dioxin & Furan Discharges Are Unanswered
6. Lack of Air Pollution Control Equipment
7. Inadequacy of Emission Estimates
8. Lack of Adequate Testing and Monitoring Requirements
9. Compliance with Environmental Justice Program

Each of these specific issues are addressed in detail in the remainder of this petition.

1. APPLICABILITY OF SECONDARY ALUMINUM PROCESSING MACT

On March 23, 2000, USEPA promulgated a Maximum Available Control Technology or MACT requirements for secondary aluminum processing plants. Anticipated air pollution control equipment required under the MACT requirements included lime-injected fabric furnace filters (LIFF). The Title V operation permit has exempted MKC from the MACT regulations avoiding the need for LIFF filters or other emission control technology, which would dramatically reduce emissions to the surrounding neighborhood. The WDNR previously recommended that MKC install filters when roof fans were installed to exhaust indoor die casting emissions, but the use of this control system was turned down by MKC.

Table 1 below compares the emissions of hydrogen chloride (HCl) currently approved by the Title V permit with those allowed under the MACT requirements for secondary aluminum processing. This suggests that if the MACT requirements are applied to MKC, there will be a 95% reduction in the allowable HCl emissions from the RCI furnace.

Table 1 - RCI Furnace Emissions under Title V Permit and MACT Requirements (lbs/ton)			
Air Pollutant	Title V Permit	MACT	MACT Reduction
HCl	8.75	0.4	95%

For the Title V operation permit, it is assumed that MKC is exempt as an aluminum die caster using only “clean charge” aluminum in its furnaces. However, MKC uses high levels of chlorine gas to remove magnesium contaminants from its aluminum scrap. This reactive flux generates hazardous air pollutant emissions such that the furnaces should be considered group 1 furnaces subject to the MACT requirements. Additionally, the presence of die lubricating oils throughout the foundry indicates that no aluminum scrap will remain lubricant free and clean. Under the definitions provided in the MACT regulations:

“Secondary aluminum production facility means any establishment using clean charge, post-consumer aluminum scrap, aluminum scrap, aluminum ingots, aluminum foundry returns, dross from aluminum production, or molten aluminum as the raw material and performing one or more of the following processes: scrap shredding, scrap drying/delacquering/decoating, thermal chip drying, furnace operations (i.e., melting, holding, refining, fluxing, or alloying), in-line fluxing, or dross cooling.

In this case, MKC melts and fluxes aluminum scrap in its furnaces and should be considered a secondary aluminum production facility subject to the MACT requirements.

As stated in the background to the MACT regulations,

“Those aluminum extruding, die casting, and foundry facilities that purchase or otherwise obtain materials other than ‘‘clean charge’’ and operate a group 1 furnace or operate a thermal chip dryer, sweat furnace, or scrap dryer/delacquering kiln/decoating kiln are considered secondary aluminum production facilities under this rule and as such are subject to the requirements of this rule.”

Additionally, under the definitions of the MACT regulations, a group 1 furnace is defined:

"Group 1 furnace means a furnace of any design that melts, holds, or processes aluminum that contains paint, lubricants, coatings, or other foreign materials with or without reactive fluxing, or processes clean charge with reactive fluxing."

The Title V permit clearly states that MKC will use reactive fluxing and provides insufficient requirements to assure that MKC will process only "clean scrap". MKC does not have sufficient control over its raw materials and production operations to assure the use of clean scrap. This lack of control is demonstrated by the history of environmental noncompliance, failure to report environmental spills, and the more than 75 times the Madison Fire Department has need to respond to emergencies at the foundry during the past three years. Additionally, MKC uses reactive flux as an integral part of their processing of aluminum in their RCI 1 furnace and recently approved RCI 2 furnace. The use of reactive flux also requires that the MACT standards apply to the MKC operations.

During its December 20, 1999 letter to the WDNR, MKC successfully changed the language used in the Title V operation permit to define "clean scrap". MKC convinced the WDNR to remove draft wording which had prohibited the furnace charge from including "...significant oils, cutting fluids, paint, wet scrap, highly corroded material, or machining chips". If the Title V operation permit will allow these materials to be added to the aluminum melting furnaces, then MKC will not be melting "clean scrap."

For many years, MKC has violated the trust of regulatory agencies and neighborhood residents by failing to report accidents and spills, attempts to circumventing permit requirements, and failure to comply with air quality regulations and standards. Applicability of the secondary aluminum processing MACT depends on our ability to trust that MKC will only utilize "clean scrap" in its furnaces. The record shows that MKC cannot be trusted to operate in the best interests of its surrounding neighbors. The Title V operation permit should recognize that the new MACT regulations for secondary aluminum processors is applicable to MKC facility and these should be included in the Title V operation permit. This would require MKC to comply with the MACT control and monitoring requirements, reducing its discharges into the surrounding neighborhood.

Besides applicability of MACT for secondary aluminum processing, MKC has not been reviewed for compliance for new source MACT under Section 112(g) of the Clean Air Act. These requirements would require a case-by-case MACT determination for the MKC operations. MKC has recently received two construction permits which allowed an increase in chlorine use and an increase in hydrogen chloride emissions:

#99-BSP-912 allowed an increase in the chlorine, hydrogen chloride, aluminum salts, and particulate matter emissions from the RCI 1 aluminum furnace and an increase in the particulate matter limitation for the MPH furnace. A draft permit was issued November 18, 1999. A final construction permit was issued December 8, 2000. This permit limits hydrogen chloride emissions to 22.6 lbs per hour. There is no annual restriction so annual allowable emissions are 99 tons per year. These emissions in and of themselves exceed the new source MACT applicability threshold of 10 tons per year.

#00-BSP-944 allowed the modification of the P36 - RCI 2 aluminum melting furnace to allow the injection of chlorine to remove excess magnesium from melted aluminum. The draft permit was issued in October 5, 2000. A final construction permit was issued December 8, 2000. This permit limits hydrogen chloride emissions to 35.0 lbs per hour from both the RCI 1 and RCI 2 furnaces.

Under Permit #00-BSP-944, hydrogen chloride emissions from the RCI 2 furnace are limited to 10 tons per year to avoid the new source MACT requirements. However, these annual emissions should be combined with those from the RCI 1 furnace of 99 tons per year to determine if the new source MACT requirements apply. Since the total annual emissions from both the RCI 1 and RCI 2 furnaces exceed 10 tons per year, both furnaces should be subject to the new source MACT requirement. If subject to new source MACT, it is expected that MKC would need to install control equipment to achieve the 95% reduction of hydrogen chloride emissions expected under the MACT for secondary aluminum processing.

Ironically, this situation is similar to that previously raised by USEPA Region 5 when it informed the WDNR of potential circumvention of the new MACT requirements by splitting two earlier MKC projects. Draft construction permit #99-BSP-925 was issued to allow the construction of a new aluminum furnace (RC2) limiting air toxics emissions to less than 10 TPY for one pollutant and 25 TPY for combined pollutants. A draft permit was issued January 25, 2000. In a February 16, 2000 letter (provided as an Attachment 8 to this petition), USEPA Region V informed the WDNR that the emissions increase from this project should be combined with that from a pending earlier permit, 99-BSP-912, or else this project would be circumventing the new source MACT requirements of 112(g). As a result, MKC withdrew this permit application on February 11, 2000.

2. INACCURACY OF THE AIR QUALITY IMPACT ANALYSIS

Rather than using air pollution control equipment to minimize its effects on the neighborhood, MKC has proposed to disperse its uncontrolled emissions. The effectiveness of this approach to protect the health of neighborhood residents is dependent on accurate emission estimates, stack specifications, and predictions of the dispersion of air pollutants released by the factory.

The Title V operation permit relies on a dispersion modeling analysis conducted by the WDNR and summarized in the technical support document provided as Attachment 6 to this petition. Air pollution concentration predictions were made by the ISCST3 dispersion model. We believe that the modeling procedures used by the WDNR under-predict the air quality impacts on the surrounding neighborhood.

The WDNR modeling analysis used to support issuance of the Title V operation permit uses simplistic assumptions which do not account for the surrounding urban landscape. These include variations in terrain and proximity to sensitive receptors such as Lowell Elementary School located only one block from the foundry.

For example, the roof tops of homes with backyards abutting the foundry are nearly in line with the MKC roof vents exhausting die lube and casting emissions. Because the MKC is located on low ground and Lowell Elementary School is located on top of a hill, the height of the foundry roof vents are essentially at the same height of the school second floor windows. None of these conditions were accounted for in the WDNR dispersion model analysis.

Much of the particulate and die lube emissions are released through roof vents which are susceptible to aerodynamic downwash and capture in the downwind recirculation cavity of the foundry buildings. This cavity exists in the backyards of neighborhood residences and must be accounted for in the modeling analysis. However, the WDNR modeling analysis does not address this issue.

The WDNR modeling analysis fails to account for the uncaptured fugitive emissions released through windows, doors and other building openings. Neither are there conditions in the Title V operation permit which require 100% capture of the air pollutants generated by MKC operations. This issue of fugitive emissions is especially important due to the close proximity of residences which essentially have the MKC operations in their backyards. Prior to conducting the dispersion modeling analysis, there was no comprehensive survey of emissions sources and release points to assure that all locations of air pollutant discharges both stack and fugitive were included in the analysis.

For some air pollutants such as particulate matter, the emission limitations are being established in the Title V operation permit at levels just sufficient to comply with air quality standards based on the WDNR modeling analysis. Since this analysis under-predicts the impacts of the foundry, the permit conditions are inadequate to assure compliance with the air quality standards and protect the health of neighborhood residents.

The inaccuracy of the modeling analysis is demonstrated by actual air pollutant measurements in the vicinity of MKC and health effects reported by nearby residents. For example:

The WDNR operates an ambient monitor for total suspended particulates (TSP) near MKC. This

monitor has measured 24-hour average TSP concentrations above 150 ug/m^3, the state air quality standard for TSP in 1999 and 2000. While the WDNR air quality modeling analysis predicts compliance with the air quality standard using maximum approved emission rates, violations of the air standard have been measured under actual and lower emission rates.

In a July 13, 1994 WDNR Entity Contact Report Form, Linda Cutts with the WDNR states that: "Within a few minutes of leaving the plant (less than 5 min.), I experienced a dizzy, 'woozy' feeling. My face and fingers felt numb and tingly, my heart was 'pounding, and I found my breathing rapid and shallow. My proprioception was disrupted, and I did not believe I could safety drive."

In 1999, the WDNR conducted an odor survey of neighborhood residents. A copy of the Odor Survey Summary developed by the WDNR is provided as Attachment 4 of this petition. Citizens attributed the following health effects to exposure to odors from MKC:

- Nausea
- Headaches
- Irritability
- Loss of Appetite
- Difficulty Sleeping
- Nose Irritations
- Throat Irritations
- Eye Irritations

Some residents reported the need to stay indoors, to close windows, or to limit outdoor activities due to exposure to MKC odors.

MKC files at WDNR offices contain hundreds of complaints from nearby residents. Many of these complaints are directly linked to odors from the MKC foundry.

If air quality standards are being attained as predicted by the Title V operation permit dispersion modeling analysis, why are reported health effects so noticeable and widespread?

If the modeling analysis were repeated taking into account the following changes, it would likely show that the existing foundry design would result in a violation of the air quality standards. No Title V operation permit could be issued until appropriate action were taken to protect air quality in our neighborhood.

Required corrections to the Title V operation permit dispersion modeling analysis are discussed in detail below:

Rural Versus Urban Dispersion Coefficients

The modeling analysis used "rural" dispersion coefficients. More appropriately, "urban" dispersion coefficients would be recommended in USEPA background documents to the ISC3 dispersion model. Under Section 7.2.3 of the April 21, 2000 proposed Guideline on Air Quality Models, USEPA suggests two methods to determine if rural or urban dispersion coefficients should be used, a Land Use Procedure and a Population Density Procedure. The preferred Land Use Procedure classifies land use within the total area circumscribed by a 3 km radius circle about the source using

the meteorological land use typing scheme proposed by Auer. If land use types I1, I2, C1, R2, and R3 account for 50 percent or more of this area, urban dispersion coefficients should be used. The land use types I1, I2, C1, R2, and R3 represent heavy industrial; light-moderate industrial; commercial, compact residential with single, some multiple family dwellings with close spacing; and, compact residential with older multi-family dwellings with close separation, respectively. In Virginia, the Department of Environmental Quality requires every air quality modeling analysis to include an evaluation of land use in the vicinity of a project to determine the most appropriate dispersion coefficients.

If the DNR evaluated the area considered in the modeling analysis, urban dispersion coefficients would be recommended by USEPA modeling guidelines. The change from rural to urban dispersion coefficients would make the modeling analysis more accurate and likely increase predicted downwind concentrations.

Incorporation of Flag Pole Receptors

In the WDNR dispersion analysis, air pollutant concentrations were predicted at ground level. As apparent in the aerial photograph and figures provided with this petition, MKC is surrounded by neighborhood homes. The backyards of some homes begin at the foot of the foundry buildings. The ISCST3 dispersion model used by the WDNR is a gaussian model which assumes that air pollutants will disperse both laterally and vertically. Pollutant concentrations at second or third story windows or balconies will be higher than those at ground level. These windows or balconies may be 15 feet or more above the ground. The ISC3 dispersion model includes an option to use flag pole receptors so that pollutant concentrations can be predicted above the ground when appropriate. Under Section 7.2.2 of the April 21, 2000 proposed Guideline on Air Quality Models, USEPA suggests that *"Receptor sites for refined modeling should be utilized in sufficient detail to estimate the highest concentrations and possible violations of a NAAQS or a PSD increment."* Due to the close proximity of neighborhood homes to the foundry and the importance of obtaining accurate estimates of pollutant concentrations, the WDNR analysis should include flag pole receptors to predict the pollutant concentrations at the second and third stories of surrounding homes and buildings in the neighborhood. The use of flag pole receptors would make the modeling analysis more accurate and would likely increase the predicted concentrations.

Incorporation of Elevated Terrain

The WDNR dispersion modeling analysis assumes the base elevation for all stacks and receptors is the same. A review of 7.5 minute USGS map for the area and walking the modeling area shows that the MKC foundry lies is a depression which is lower than adjacent Atwood Avenue. The terrain rises southeast of the MKC foundry. This area is approximately 20 feet higher than the foundry base elevation. It includes Lowell Elementary School located one block away from the foundry which is shown in the aerial photographs and figures provided with this petition. The school has two stories so that second story classrooms may be the same height or higher than MKC roof vents. Incorporation of elevated receptors in this area would improve the accuracy of the modeling analysis and would likely increase the predicted concentrations. There have been prior modeling analyses conducted by the WDNR which have included the use of elevated receptors.

Concentration Estimates Within the Downwash Wake Cavity Zone

The dispersion of air pollution from stacks and especially the roof vents at the foundry is affected by the flow of wind over nearby buildings. This "aerodynamic downwash" is expected to be caused by any building or structure located within a distance 5L from the stack. Adjacent to the foundry buildings is a downwash cavity zone. The dispersion of air pollutants within this cavity zone is more complex than that for which the ISC3 dispersion model was intended. It is important to predict concentrations within this cavity zone since neighborhood homes are located immediately adjacent to the foundry buildings. In the April 21, 2000 proposed "Guideline on Air Quality Models", USEPA has proposed to replace the ISC3 dispersion model with ISC-Prime. The new model is able to predict concentrations within the cavity zone. According to Dennis Atkinson who responds to modeling questions for USEPA from its web site, Support Center for Regulatory Models, *"ISCST3 does not have a cavity routine within it. Therefore, either SCREEN3 or ISC-PRIME would need to be used for the cavity areas."* In North Carolina, the Department of Environmental and Natural Resources, requires every air quality modeling analysis to use the SCREEN3 model to estimate downwash cavity zone concentrations if this zone is accessible to the general public. The use of the SCREEN3 or ISC-PRIME model by the WDNR would allow an estimate of downwash cavity concentrations, improve the accuracy of the modeling analysis, and likely increase the predicted concentrations.

It is interesting to note that the WDNR previously conducted its own downwash cavity analysis of MKC discharges. This is documented in a August 29, 1994 WDNR memorandum from John Roth to Tom Roushar. Concentrations above the air quality standard for particulate matter were predicted. In the summary, it is stated: *"However, additional screening modeling of the downwind recirculation cavity region using SCREEN 2C shows that a potential problem may exist within the cavity. This region does extend off of Madison-Kipp property onto an adjacent residential area."* It is unfortunate that exceedences of the air quality standard were predicted in 1994 but no action has been taken by the WDNR to protect the residents living adjacent to the foundry. If a similar analysis had been conducted for the Title V operation permit, it could not be issued.

Incorporation of Fugitive Releases

Prior to conducting the dispersion modeling analysis, there needs to be a comprehensive survey of emissions sources at the MKC foundry and release points. This will assure that all locations of air pollutant discharges are included in the analysis. While stacks may exhaust the majority of the foundry emissions, releases through windows, doors and other building opening will immediately expose neighbors living adjacent to the foundry.

If it assumed that none of the foundry discharges are released as fugitive emissions, then the Title V operation permit must include specific language to assure 100% capture of process air pollutant emissions. For example, there are specifications for a Permanent Total Enclosure specified under 40 CFR Part 51, Appendix M, Method 204. Under this method, an enclosure is evaluated against a set of criteria. If the criteria are met and if all the exhaust gasses from the enclosure are ducted to a control device, then the air pollutant capture efficiency is assumed to be 100% and the capture efficiency need not be measured. These criteria are as follows:

(a) Any Natural Draft Opening (NDO) shall be at least four equivalent opening diameters from each emitting point unless otherwise specified by the Administrator.

(b) The total area of all NDO shall not exceed 5 percent of the surface area of the enclosure's four walls, floor, and ceiling.

(c) The average facial velocity (FV) of air through all NDO's shall be at least 3,600 m/hr (200 fpm). The direction of air flow through all NDO shall be into the enclosure.

(d) All access doors and windows whose areas are not included under design requirement (b) and are not included in the calculation under design requirement (c) shall be closed during routine operation of the process.

(e) All emissions must be captured and contained for discharge through a control device.

Use of Vertical Air Flow from Obstructed Roof Vents

Some of the stacks associated with the release of MKC foundry emissions are actually roof vents (i.e. Stack S19) which release the majority of the foundry particulate emissions. These were evaluated by the WDNR assuming a stack with equivalent diameter and air flow. If the exit of a stack or roof vent is obstructed, the exhaust gases do not flow vertically. In this case, the vertical exit velocity is significantly reduced, which in turn reduces the dispersion of the stack plume. For an obstructed stack or roof vent, the exit velocity is typically replaced with a small, nominal value such as 0.1 meters per second. The use of a nominal 0.1 meters per second exit velocity for these roof vents would more accurately estimate their dispersion and likely increase the predicted concentrations. In prior air quality modeling analyses, the WDNR has used this nominal velocity for obstructed stacks or roof vents.

Consideration of Downwash from Surrounding Homes

The dispersion of air pollution from stacks and roof vents is affected by the flow of wind over nearby buildings. This "aerodynamic downwash" is expected to be caused by any building or structure located within a distance 5L from the stack. L is the length or width of the building. The modeling discussion in the WDNR analysis does not indicate which buildings or structures were considered when predicting the dispersion of the project discharges. The modeling analysis should account for the influence from nearby buildings such as those of MKC, but also surrounding homes which are located next to the foundry buildings.

Size of the Receptor Grid

The modeling analysis used a receptor grid that extended only 500 meters from the factory. MKC proposes the use of taller stacks to disperse its hydrogen chloride and chlorine emissions. The air pollution will be spread over a larger area, both increasing the area of the neighborhood affected by the emissions and pushing the location of highest concentrations further from the factory. Under Section 8.2.2 of its "Guideline on Air Quality Models", USEPA suggests that for large air pollution sources, the receptor grid should extend out to 10 kilometers or 10,000 meters. The use of a larger receptor grid for the modeling analysis would determine if higher concentrations will occur beyond the original 500 meter receptor grid.

Evaluation of Odor Impacts

In December 1999, the WDNR completed its survey of area residents and determined that a significant number of people have identified MKC as a source of unwanted odors. A summary of the results of this survey is provided as Attachment 4 to this petition. To address the odor impacts, the WDNR should have included an analysis to predict how the foundry contributes unacceptable odors in the neighborhood. By modeling the concentrations of the odorous pollutants, the WDNR could predict the effects of the project on objectionable odors.

Additionally, the odor survey conducted by the WDNR demonstrated that a significant odor problem exists in the neighborhood. WDNR staff have also documented the unacceptable "odors" associated with the MKC operations. As previously noted, a July 13, 1994 WDNR Entity Contact Report Form, Linda Cutts states that: *"Within a few minutes of leaving the plant (less than 5 min.), I experienced a dizzy, 'woozy' feeling. My face and fingers felt numb and tingly, my heart was 'pounding, and I found my breathing rapid and shallow. My proprioception was disrupted, and I did not believe I could safety drive."* Much of these odors may be due to the release of foundry emissions through short roof vents subject to aerodynamic downwash and through undocumented fugitive release points such as windows, doors and other building openings.

The emissions and odors from MKC are a complex mixture of air pollutants including chlorine, metal salts, and partially combusted die lube oils. It is possible to regulated the emissions and exposure to this pollutant mixture through the WDNR odor regulations. It is within the authority of the WDNR to conclude that unacceptable odors are being generated by MKC and require the company to take action. Until the Title V operation permit includes measures to eliminate the objectionable odors identified by neighborhood residents and WDNR staff, it should not be issued.

Evaluation of Compliance with Air Quality Standard for $PM_{2.5}$

USEPA is proceeding to implement its new $PM_{2.5}$ air quality standard for particles less than 2.5 microns in size. This standard addresses the serious health effects of very small particles. One of the references in the WDNR analysis is the USEPA AP-42 report of emission factors. This shows that a large percentage of the emissions from the factory could be particles in this small size range. The WDNR should have used the modeling analysis to compare the foundry impacts with the proposed $PM_{2.5}$ air quality standard. If exceedences of the new standard are predicted, it would demonstrate the need for emission reductions to comply with this standard and assure the protection of neighborhood residents from emissions of $PM_{2.5}$.

3. LACK OF PUBLIC REVIEW OF FINAL OPERATION PERMIT

The draft operation permit for MKC was issued by the WDNR on November 18, 1999. Extensive comments were submitted by neighborhood residents during the public comment period and December 21, 1999 public hearing. Response to public comments received during the 1999 public hearing and public comment period were not released by the WDNR until nearly one year later on November 16, 2000. A new draft permit was provided to USEPA Region V for review in early 2001. The Region 5 review period ended March 16, 2001.

Between the time the draft operation permit was provided to the general public on November 18, 1999 and the completion of the Region V review on March 16, 2001, MKC received several new source construction permits from the WDNR which significantly changed the design, emissions and air quality impacts of their facility. These permits are summarized below:

- #99-BSP-912 allowed an increase in the chlorine, hydrogen chloride, aluminum salts, and particulate matter emissions from the RCI aluminum furnace and an increase in the particulate matter limitation for the MPH furnace. A draft permit was issued November 18, 1999. A final construction permit was issued December 8, 2000.

- Draft construction permit #99-BSP-925 was issued to allow the construction of a new aluminum furnace (RC2) limiting air toxics emissions to less than 10 TPY for one pollutant and 25 TPY for combined pollutants. A draft permit was issued January 25, 2000. In a February 16, 2000 letter, USEPA Region V informed the WDNR that the emissions increase from this project should be combined with that from a pending earlier permit, 99-BSP-912, or else this project would be circumventing the new source MACT requirements of 112(g). As a result, MKC withdrew this permit application on February 11, 2000.

- #00-BSP-944 allowed the modification of the P36 - RCl 2 aluminum melting furnace to allow the injection of chlorine to remove excess magnesium from melted aluminum. The draft permit was issued in October 5, 2000. A final construction permit was issued December 8, 2000.

- #00-BSP-929 allowed the construction of a new 2000 kw diesel generator. Allowable NOx emissions were 51 TPY. In and of themselves, these emissions are above the PSD significant emissions increase threshold. The draft permit was issued October 5, 2000. A final construction permit was issued December 20, 2000.

During the review of draft construction permit #99-BSP-925, USEPA Region 5 also made the following statements with regard to the effect on pending construction permit applications on the Title V operation permit:

"Additionally, construction permit 99-BSP-912 was issued in the same permitting action with operation permit 113014220-P01. USEPA believes that the operation permit should be reproposed to include the draft construction permit 99-BSP-925, and afford the public an opportunity to comment on the facility in its entirety."

Based on the comments made by Region 5 to the WDNR, the draft 1999 Title V operation permit should have been reissued to incorporate the three construction permits issued to the facility during

the one year period the WDNR considered public comments on the draft 1999 Title V operation permit. This would allow the public an opportunity to consider the impacts of the existing MKC foundry as a whole, rather than separating the 1999 operation permit and three construction permit projects piecemeal. The Title V operation permit cannot be issued until the WDNR has provided sufficient opportunity for the public to review the permit and supporting documents which reflect the MKC foundry as it stands today. These three construction permits should be included in the final Title V operation permit so the compliance and impacts of the entire foundry can be considered by the WDNR and general public.

4. APPLICABILITY OF THE PSD REGULATIONS

The WDNR support document for the Title V operation permit fails to identify MKC as a major source under the Prevention of Significant Deterioration or PSD air quality regulations. If MKC were a major source, then any increase in emissions above the PSD significant emissions increase thresholds from future projects would be subject to the more stringent requirements of the PSD regulations including the use of Best Available Control Technology. The factory more likely would be required to reduce the impacts of its emissions by the use of control equipment rather than only through dispersion.

The PSD regulations provide a list of industries which are considered major sources if their potential emissions are greater than 100 tons per year. One of these industries is "secondary metal production plants". The WDNR technical support document has not determined if MKC is to be considered a secondary metal production plant and subject to the 100 ton per year threshold to determine if it is a major source.

The WDNR currently considers other industries that melt metals other than aluminum as part of this PSD source category. Additionally, USEPA provides sufficient information on the definition of "secondary metals production" to conclude that MKC should be included in this category and subject to the 100 ton per year major source threshold. One of the references in the WDNR analysis is the USEPA AP-42 report. The information provided for the MKC operations in this report are titled "Secondary Aluminum Operations", clearly an indication that its operations are considered in this PSD category. Additionally, in its background memoranda to the PSD regulations, USEPA includes a 1989 PSD applicability determination for Golden Aluminum Company in San Antonio, Texas. This company had similar operations as MKC, melting aluminum scrap, and was concluded to be a secondary metals production plant.

In a December 4, 1998 memorandum, USEPA clarifies the treatment of aluminum die casting operations for the purposes of new source review applicability. It concludes that die casting is not secondary aluminum production if the feedstock requires little fluxing or alloying. MKC requires the extensive use of chlorine reactive flux for demagging its aluminum feedstock. It is not simply a die casting operation but a secondary metals production plant subject to the 100 tons per year major source threshold.

Had the WDNR correctly identified the foundry as a major source for the PSD regulations, construction permits issued to the facility since the draft Title V operation permit was released on November 18, 1999 may have been subject to the PSD requirements either due to the emissions from each project alone, the combination of emissions from all projects combined, or due to emissions from increased utilization of the existing foundry operations. These include the following construction permits:

- #99-BSP-912 allowed an increase in the chlorine, hydrogen chloride, aluminum salts, and particulate matter emissions from the RCI aluminum furnace and an increase in the particulate matter limitation for the MPH furnace. A draft permit was issued November 18, 1999. A final construction permit was issued December 8, 2000.

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and 25 TPY for combined pollutants. A draft permit was issued January 25, 2000. In a February 16, 2000 letter, USEPA Region V informed the WDNR that the emissions increase from this project should be combined with that from a pending earlier permit, 99-BSP-912, or else this project would be circumventing the new source MACT requirements of 112(g). As a result, MKC withdrew this permit application on February 11, 2000.

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The Title V operation permit should not be issued to MKC until it is correctly identified as a secondary metals production plant and designated a major source under the PSD regulations.

The three recent construction permits should be included in the final Title V operation permit so the compliance and impacts of the entire foundry can be considered by the WDNR and general public.

As part of the compliance evaluation for these three construction permits, they should be evaluated for applicability of the PSD air quality regulations. For example:

Nitrogen oxide emissions from the diesel generator approved with Permit #00-BSP-929 are 51 tons per year. These exceed the PSD applicability threshold of 40 tons per year so the generator should comply with the PSD requirements including use of Best Available Control Technology.

The modification of the RCI 1 and RCI 2 furnaces under Permits #99-BSP-912 and #00-BSP-944 allowed increase use of the chlorine fluxing agent. This will allow greater use of the aluminum which requires the demagging process and allow increased production at the foundry. Under USEPA policy on PSD applicability, the potential emissions from this increased production or utilization of the existing foundry operations should be added to those from the furnace modification projects to determine the applicability of the PSD requirements. Under the Title V operation permit, the die casting operations have a particulate matter limit of 14 lbs/hr or 61.3 tons per year. Actual emissions from these operations in 1999 were 14.6 tons per year. The potential emissions increase from the increased utilization of the die casting operations are 46.7 tons per year (i.e. 61.3 - 14.6). These emissions in and of themselves exceed the PSD applicability threshold of 15 tons per year, so the modification of the two aluminum furnaces should have been subject to the PSD requirements including the use of Best Available Control Technology for the control of these emissions.

5. THE QUESTION OF DIOXIN & FURAN DISCHARGES IS UNANSWERED

USEPA studies have shown a correlation between aluminum de-magging processes and the discharge of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDD/F). The USEPA proposed MACT background documents goes into detail about the conditions for production of dioxins and furans. PCDD/F emissions are created by a reaction between organic materials such as oils and greases on the aluminum with the hot chlorine gas. The USEPA has conducted research studies which link PCDD/F production with secondary aluminum processes. While MKC has maintained that they only use clean aluminum from their suppliers, there is no reliable testing to meet "clean charge" standards. Additionally, die lubricants are used throughout the adjacent die casting facility, are present throughout the workplace, and in the ventilation air used by the aluminum scrap furnaces. A Title V operation permit should not be granted until extensive PCDD/F testing has been completed. It should first be demonstrated to neighborhood residents that uncontrolled PCDD/F emissions are not being released by MKC.

6. LACK OF AIR POLLUTION CONTROL EQUIPMENT

The Title V operation permit will allow the aluminum furnaces stack to discharge particulate matter, aluminum soluble salts, and hydrogen chloride without the use of air pollution control equipment. Clearly, control equipment exists for these air pollutants. The WDNR analysis indicates that the aluminum degassing operation is equipped with a baghouse with off-line shaker system. Why couldn't a similar system be used to control the particulate matter and aluminum soluble salts discharged from the furnace stack? The chlorine storage area is equipped with a scrubber which is activated if chlorine is detected. Why couldn't a similar system be used to control the hydrogen chloride discharges from the furnace stack?

It is not clear why the WDNR will allow MKC to discharge large amounts of hydrogen chloride into the air without requiring air pollution control equipment used for other large sources of this pollutant. MKC will release more than 22 times the amount of hydrogen chloride allowed under the MACT requirements for secondary aluminum processing.

The WDNR appears to have regulations which set the acceptable concentrations of hydrogen chloride in the air. Why don't these regulations require the use of control equipment for the hydrogen chloride to be discharged from MKC? The USEPA identifies municipal, medical and hazardous waste incinerators as other large sources of hydrogen chloride and requires them to use air pollution control equipment to reduce their emissions. If the WDNR can require these other large sources of hydrogen chloride to control their discharges, the WDNR should require MKC to control its discharges as well.

7. INADEQUACY OF EMISSION ESTIMATES

One of the references in the WDNR analysis is the USEPA AP-42 report of emission factors. In Section 12.8, it states: "According to the VOC/PM Speciate Data Base Management System (SPECIATE) data base, the following hazardous air pollutants (HAPs) have been found in emissions from reverbatory furnaces: chlorine, and compounds of manganese, nickel, lead, and chromium. In addition to the HAPs listed for reverberatory furnaces, general secondary aluminum plant emissions have been found to include HAPs such as antimony, cobalt, selenium, cadmium, and arsenic, but specific emission factors for these HAPs are not presented due to lack of information."

The WDNR analysis does not include any emission estimates for some of these air pollutants including nickel, lead, chromium, antimony, cobalt, selenium, cadmium and arsenic.

A major source of emissions from the MKC foundry is the use of the die lubricating oil. When used in the die casting process, the evaporated oil or constituents of the partially combusted oil are released through roof vents and other building openings. Lubricant residue charged to the aluminum furnaces will be released through the furnace stacks or with fugitive emissions. Health complaints often coincide with the odors associated with the lube oil. However, the Title V operation permit did not include a thorough evaluation of the composition of the emissions associated with the use of the die lubricating oil.

The operation permit should not allow MKC to disperse rather than control its emissions until there is a thorough identification of all the pollutants to be emitted and evaluation if these discharges comply with applicable air quality standards.

8. LACK OF ADEQUATE TESTING AND MONITORING REQUIREMENTS

The Title V operation permit to be issued by the WDNR is complicated and contains many restrictions and footnotes designed to avoid applicability of more restrictive air quality regulations such as the PSD and MACT requirements. The three construction permits recently issued by the WDNR (which should be incorporated into the Title V operation permit) are also complicated and contain many restrictions and footnotes designed to avoid applicability of more restrictive air quality regulations. If these regulations applied to MKC, the foundry could no longer discharge uncontrolled air pollution emissions into the surrounding neighborhood.

Avoidance of more restrictive air quality regulations is dependent on accurate emission estimates, extensive recordkeeping, and conscientious process monitoring by MKC. Due to the impacts on the surrounding neighborhood residents if emission estimates are incorrect or MKC fails to maintain records and monitors, the Title V operation permit should be rewritten to provide state of the art compliance demonstration methods. These could include periodic compliance testing and use of continuous emissions monitoring systems for visible emissions and hydrogen chloride emissions.

MKC files at the WDNR offices are laden with past violations of air quality reporting requirements and permit regulations. The MKC record shows a disregard for compliance with air quality regulations. For example:

On July 13, 1994, WDNR inspector Linda Cutts investigated objectionable odors from MKC. In her Entity Contact Form, she states: "I determined the source of the metallic odor was most likely from Madison-Kipp. The acrid odor was definately from this source. I entered the plant to investigate. The Plant Manager was not present, and I was told that '**no one was in charge**'." How can MKC be trusted to comply with complicated recordkeeping and process monitoring requirements, if process and environmental compliance is conducted so shabbily and an inspector enters the production area finds no responsible corporate official present to supervise operations or discuss air quality standard violations.

On December 7, 1994, the WDNR issued a Notice of Noncompliance to MKC for failing to report a chlorine spill associated with the operation of its RCI aluminum furnace. A white plume of uncontrolled chlorine was released when chlorine continued to be added to the RCI 1furnace when a mixer had broken. Earlier that day, a plume of black smoke was released when treated wood fell into the furnace.

On February 27, 1995, the WDNR issued a notice of violation to MKC for failing to comply with the following regulations:

- Failure to obtain a new source construction permit to modify its RCI 1 aluminum furnace to increase its melting capacity and add chlorine injection pump system.

- Failure to disclose emissions from the RCI furnace modification.

- Releasing objectionable odors into the surrounding neighborhood.

Throughout the 1990's MKC investigated groundwater contamination due to the release of tetrachloroethene from its operations. Throughput this investigation, MKC failed to notify area

residents that area groundwater had been contaminated. Residents learned of the remediation project through a Freedom of Information Act request in 1999.

In 1999, the WDNR proposed to respond to resident complaints and conduct an odor survey in the MKC vicinity. Despite many years and hundreds of complaints contained in WDNR files, including those from WDNR staff, the company opposed any effort to determine if it was the cause of the objectionable odors.

When the City of Madison proposed to conduct a health survey to determine the cause of the many health related complaints in neighborhood surrounding MKC, the foundry opposed the survey.

The lack of control over its raw material and production operations is also shown by the more than 75 times the Madison Fire Department has need to respond to emergencies at the MKC foundry during the past three years. A recent example is an August 9, 2000 spill of 50,000 pounds of molten aluminum from the RCI furnace, causing smoke as the hot metal contacted wires and oil residues on the foundry floor.

Due to the proximity of neighborhood residents, it is essential that MKC comply with air quality protection requirements at all times. The Title V operation permit must include reliable methods to assure compliance by MKC. These should include periodic compliance stack testing and use of continuous emissions monitoring equipment.

Here are several examples:

Continuous Monitoring of Stack S22 Emissions

The Title V operation permit includes a requirement for monthly measurement of visible emissions from the stack for the aluminum melting furnaces. This requirement appears to be necessary because of the complex relationship between chlorine use, operating conditions and visible emissions, primarily from the generation of aluminum soluble salts.

Due to the foundry's reliance on dispersion rather than control the furnace emissions, the short distance to neighborhood residences, and the complex relationship between emissions, chlorine usage and operation conditions, the Title V operation permit should require more stringent monitoring of these operations to assure compliance with the permit emission limitations. At a minimum, the permit should require the installation of continuous monitoring equipment on the stack for the furnaces. This monitoring equipment could continuously measure the visible emissions rather than the current once each month schedule which will test only when ideal conditions are arranged.

Additionally, this stack will be approved to discharge uncontrolled hydrogen chloride. Emissions approved in the Title Voperation permit are 22 times higher than those allowed under the MACT requirements for secondary aluminum processing. It seems reasonable that if MKC is allowed to release so much pollution into the air that they should be required to install continuous monitoring equipment for this pollutant as well.

Regular Testing

The draft permit includes many references to the test methods to be used should testing be required. However, it appears that the only tests required are initial compliance tests. Due to the foundry's reliance on dispersion rather than control of the furnace emissions, the short distance to neighborhood residences, and the complex relationship between emissions, chlorine usage and operation conditions, the Title V operation permit should require more frequent testing of the foundry emissions. At a minimum, MKC should be required to test major emission stacks annually to assure they are continuing to comply with the permit requirements.

Testing for Other Pollutants

As discussed earlier, the WDNR analysis did not evaluate emissions of the other pollutants that USEPA suggests are discharged from aluminum melting furnaces - nickel, lead, chromium, antimony, cobalt, selenium, cadmium and arsenic. The operation permit should require MKC to conduct tests to determine if and how much of these air pollutants are discharged so the WDNR can determine if the factory operations comply with air pollution regulations.

Testing of Aluminum Diecasting Emissions

The aluminum diecasting operations will be approved to discharge particulate matter and volatile organic compounds. The air pollution will be released through roof vents with a total of 500,000 cubic feet per minute of air flow. The WDNR analysis estimates the actual discharges to be slightly less than these permit limitations.

From the WDNR analysis it was not clear how the actual emissions were estimated and if test results from the factory were used. The operation permit should require regular testing of the die casting operations for the following reasons:

1) these operations contribute a significant amount of factory discharges;

2) discharges are released uncontrolled from short roof vents or as fugitive emissions and contribute significantly to the downwind concentrations of air pollutants and odors where homes are adjacent to the foundry buildings; and,

3) the WDNR actual discharge estimate is nearly the permit limitation suggesting that if the estimate is inaccurate, these operations may exceed the permit limitation. The WDNR should include in the air quality permit some sort of investigative stack testing of the aluminum diecasting operations to verify the estimates of actual discharges and compliance with the permit limitations.

9. COMPLIANCE WITH ENVIRONMENTAL JUSTICE PROGRAM

In 1994, President Clinton signed an Executive Order which directs Federal Agencies incorporate EJ principles as part of their day-to-day operation by identifying and addressing "disproportionately" high and adverse human health and environmental effects of programs, policies activities on minority populations and low-income populations."

The east side of Madison, Wisconsin is home to the many low income and minority families. Lowell Elementary School, located only 1 block from the MKC foundry, participates in the federal Title I education program, receiving funds to ensure that poor and educationally disadvantaged students have additional support to help them meet high academic standards.

The ease side of Madison also has the burden of dealing with the environmental impacts of the majority of the city's industries and sources of pollution. In addition to MKC, other industries and pollution sources impacting the neighborhood include the following:

- Dane County Regional Airport has its main flight path over the neighborhood surrounding MKC and receives the majority of its noise complaints from this neighborhood;

- A recent WDNR odor survey demonstrated that the neighborhood is impacted by the Oscar Meyer Foods Corporation meat smoking operations and Webcrafters, Inc. web offset printing operations.

- Other east side industries reporting to the national toxics release inventory include Royster-Clark Inc.; Berntsen Brass & Aluminum Foundry; Mautz Paint Company; Rayovac Corporation; Rhodia Inc.; Safety-Kleen Systems; and Vendura Industries.

- During the 1990's Wisconsin & Southern Railroad moved its train switching operations to the east side of Madison, dramatically increasing freight train noise, traffic disruptions and safety hazards to east side residents.

- Our neighborhood is a major thoroughfare for commuter traffic flowing from bedroom communities to downtown Madison offices.

Due to the composition of the population in the area surrounding MKC and the disproportionate amount of other environmental pollution which already impacts our quality of life, the Environmental Justice program should be applied to all air quality permits issued to the MKC foundry. Each USEPA regional office as well as the WDNR have contacts to evaluate the applicability of this EJ program. However, there is no discussion of the EJ program in the support documents for the operation permit.

Issues which should be addressed during permitting are described at the USEPA Region 5 web site for the EJ program at: http://www.epa.gov/ARD-R5/ej/ejmain.htm.

Here are suggestions for implementing the Environmental Justice Program for MKC Title V operation permit:

1. Monitoring. It may be appropriate to include permit conditions that set additional monitoring requirements, or require the permitted facility to make monitoring data more readily accessible to the impacted community.

The Title V operation permit relies heavily on the use of dispersion rather than emissions control to barely assure protection of the air quality in the surrounding neighborhood. MKC has a terrible environmental compliance record, failing to report spills and avoiding regulatory requirements. The operation permit should include extensive testing and monitoring procedures which will verify continued compliance with permit emission limitations and the assumptions used as a basis for issuance of the operation permit.

The WDNR has the discretion to require more frequent stack testing and use of continuous emissions monitoring. Every effort should be taken to assure failsafe mechanisms and procedures are required by the Title V permit to verify continuous compliance by MKC.

2. Risk reduction. Any additional steps which will reduce risk from a permitted activity are appropriate, where the impacted population already faces a heightened risk of harm to human health and the environment. The team may include improved or more stringent standard operating procedures (SOPs) to reduce releases, and therefore exposures. For example, SOPs may include surface facility construction and material handling.

Regulatory discretion and every effort should be made to encourage MKC to use available air pollution control technologies and methods to reduce its air pollution discharges in the surrounding neighborhood. The operation permit should recognize MKC as subject to the new MACT regulations and incorporate its air pollution control requirements. The current Title V operation permit allows hydrogen chloride emissions from the aluminum furnaces which are 22 times greater than the MACT standard. The Title V permit should recognize available control technology and require MKC to control these emissions.

The permit should identify the foundry as a major source under the Prevention of Significant Deterioration regulations so new sources are subject to the Best Available Control Technology requirements of these rules.

State of the art dispersion modeling procedures should be used to assure protection of the air quality standards. For evaluation of the Title V operation permit, the WDNR has used simplistic modeling procedures which failed to consider the urban setting of MKC, the differences in elevation between MKC and the surrounding neighborhood, the close proximity of homes with backyards abutting the foundry buildings, and sensitive receptors like Lowell Elementary School. The WDNR has the authority and skills to require the use of more precise modeling procedures. The modeling analysis supporting the issuance of the Title V operation permit should be repeated. Prior to conducting this analysis, there needs to be a comprehensive survey of emissions sources at the MKC foundry and their release points. This will assure that all locations of air pollutant discharges are included in the analysis. While stacks may exhaust the majority of the foundry emissions, releases through windows, doors and other building opening will immediately expose neighbors living adjacent to the foundry. The new dispersion modeling analysis should incorporate more accurate procedures

to assure the maximum concentrations are predicted. If the predictions are more accurate, dispersion becomes a less viable option compared to the use of control equipment or control methods.

The WDNR should use its authority and discretion to conclude that MKC is a cause of objectionable odors within the neighborhood and require corrective action to reduce exposure to all sources of odors from the MKC foundry.

3. Release preparedness. Additional requirements for emergency preparedness may be appropriate to address the risk from an accidental or unpermitted release.

The Risk Management Plan for MKC chlorine storage concludes that an accidental release of chlorine would affect over 16,000 people. To warn residents of an accidental release, MKC proposes to contact the 911 emergency telephone number. This warning method is inadequate and does not provide adequate protection of neighborhood and city residents. This is an especially dangerous situation for residents which live close to storage and handling areas. The RMP submitted by MKC should be improved prior to issuance of the Title V operation permit.

All chlorine storage and handling areas should be equipped with monitoring and warning equipment to detect releases, and immediately warn the neighborhood of the accident. It should not be left to the discretion of MKC to decide if local authorities or surrounding neighbors should be warned.

If the Title V operation permit incorporates sufficient control and compliance demonstration methods to assure the protection of the surrounding neighborhood, it will reflect the true cost of the air pollution discharges and provide incentives for MKC to find cleaner and safer manufacturing alternatives. Everyone would benefit from this change to less polluting production methods.

Attachment 1

Transcript of December 21, 1999 Title V Operation Permit Public Hearing

Attachment 2

Newspaper Articles
and
Neighborhood Flyers

Attachment 3

Neighborhood Petitions

Attachment 4

Odor Survey Summary

Attachment 5

Draft Title V Operation Permit #113014220-P01

Attachment 6

WDNR Technical Support Document
November 18, 1999

Attachment 7

WDNR Memorandum
Response to Comments
November 16, 2000

Attachment 8

USEPA Region 5 Letter to WDNR
February 16, 2000

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