



SCDES Responses to Residents' Questions about Silfab Solar

Updated Oct. 8, 2024

The South Carolina Department of Environmental Services (SCDES) has provided answers to the questions below based on information available at this time. Some answers are limited because the questions: (1) cannot be addressed at this time, or (2) should be directed to Silfab, local officials, or other state agencies.

As general information, Silfab will be required to submit a risk management plan (RMP) to the EPA that will be shared with SCDES. This plan will outline how the facility plans to prevent accidental releases. It will also highlight how the facility has coordinated its emergency response plan with local emergency response agencies. The facility is required to submit the RMP to the EPA before it brings regulated substances on-site. Silfab has not submitted the RMP to EPA yet. Once submitted, SCDES will review it and schedule a compliance inspection.

Where are these chemicals coming from?

Facilities aren't required to provide the names and locations of their chemical suppliers to SCDES. Silfab would have this information.

Can you please schedule a mock evacuation to prove that it is possible to remove the 52,000 citizens, including school children and nursing home residents who reside within that mile radius, in a safe and timely fashion? Will there be evacuation signage erected? Where will we go and how long will we be removed from our homes? When allowed to return, are the contents of our homes contaminated?

Silfab will be required to coordinate its emergency response plans with local emergency response agencies. That coordination is required prior to bringing regulated substances on-site and submitting its risk management plan (RMP) to the EPA. The RMP will provide information about possible impacts of a worst-case release scenario and also more realistic release scenarios. The local emergency response agencies will use this information to plan for their response. Silfab will be required to perform annual drills/exercises with these local response agencies. If a release has the potential to impact the schools or nearby residents, SCDES strongly encourages Silfab and the local emergency response agencies to include the schools and nursing home residents in these exercises. Decisions on signage, where to go and how long

residents should be removed from homes, and when residents should return to homes will be made by the local emergency response agencies and the on-scene incident command on a case-by-case basis. SCDES only serves in an advisory capacity and will not be the lead agency for these decisions. Any possible home contamination claims would need to be addressed with Silfab.

What occurrences will cause a need for evacuation? Fire? Poisonous gases discharged? Is there a potential for explosions?

The facility plans to store two regulated substances on-site: silane (a flammable gas) and hydrochloric acid (a toxic liquid). These chemicals are used at many facilities across the country and can be handled safely. Silfab is required to coordinate its emergency response plan with local emergency response agencies to determine the most appropriate procedures in the event an air release or a fire occurs at the site.

We have been told if a fire erupts, firemen won't be able to extinguish it and it will continue burning and releasing toxic fumes. Is this accurate?

Silfab is required to coordinate its emergency response plan with the local emergency response agencies to determine the most appropriate procedures for any fire that may occur at the site.

When they sound an alarm to leave the area, do we need to be wearing gas masks? What type of mask would filter out these particular fumes?

Silfab is required to coordinate its emergency response plan with the local emergency response agencies to determine the most appropriate procedures and if any personal protective equipment (PPE) is necessary. It's highly unlikely that PPE would be required outside of the fence-line of the facility.

In the event of an evacuation, will parents be able to go to the schools and pick up their children?

Silfab is required to coordinate its emergency response plan with the local emergency response agencies to determine the most appropriate procedures for notifying schools, if necessary. Many decisions about these procedures will be made by local emergency response agencies on a case-by-case basis.

How many new toxins and chemicals will be found in our water, even at levels deemed safe, that aren't there now?

Wastewater from the facility will be pre-treated on-site and then discharged to the City of Rock Hill's sewer system. The City of Rock Hill will be required to notify SCDES of the quality and quantity of the water being discharged to their system and any anticipated impact on the

quantity or quality of water to be discharged from their system. SCDES regulates the City of Rock Hill's discharges to ensure appropriate protections are in place for waters that may be a source of drinking water.

Can our current roads handle the daily amount of extra traffic the plant itself will generate?

A traffic study was performed for this site by S.C. DOT, which could best answer this question.

It was stated air scrubbers will remove 96 or 97% of the pollutants. What about the rest? Breathing 3 or 4% more air pollution on a daily basis adds up. What is the impact on residents' health? How about ones who already have compromised breathing - asthmatics or those with COPD? Will they suffer with an escalation in breathing events?

Facilities are allowed to release some level of air pollution as long as state and federal standards and air permit limits are met. These state and federal air quality standards are set to be protective of public health, especially children, the elderly, and those with respiratory conditions beyond the fence-line of a permitted facility. The air permit SCDES issued to Silfab in March 2024 has limits on the amount of air pollutants that can be released by the facility. It requires the air scrubbers to remove air toxic pollutants by at least 96%. The remaining emissions will be emitted through an exhaust stack. An air dispersion analysis was performed to simulate the dispersion of these air pollutants from the stack into the ambient air. This analysis showed the air emissions would not exceed any state or federal health-based standards that are protective of public health and the environment beyond the fence-line.

How will this pollution impact our soil, wildlife and water?

Silfab demonstrated that its air emissions could meet all state and federal air quality standards. The federal standards were set to be protective of public health and the environment. There are no anticipated impacts to soil, wildlife or waters.

What sort of failsafe is there if those air scrubbers become nonfunctioning for minutes, hours or days before a problem is humanly discovered?

If the scrubber system becomes inoperable, the process will automatically shut down. The air permit also requires Silfab to notify SCDES of any malfunction or upset that lasts more than one hour if emissions exceed the specified limits. It's also required to minimize any excess emissions. The facility must monitor the operations of the air scrubber regularly and document readings to ensure it is operating properly in accordance with the manufacturer's specifications. Records of this documentation will be periodically reviewed by SCDES inspectors.

Legally, do people selling their homes have to disclose this factory on their paperwork?

SCDES isn't involved with real estate issues.

Have ALL chemicals been tested for use and safety within the Silfab process? When were those tests performed? Have any modifications been made? Are they being retested with the appeal and litigation?

The Occupational Safety and Health Administration (OSHA) requires chemical manufacturers to develop a safety data sheet (SDS) for each hazardous chemical they make or import. The SDS includes information about chemical uses and safety. The SDS is given to facilities that use these chemicals and the facility is required to maintain the SDS onsite. OSHA also requires that all employees be trained on how to safely handle all chemicals onsite. The facility is not required to retest the chemicals.

Once the facility starts solar panel production, air emission stack testing will be required. The initial stack test for HCl and HF emissions will be required within 45 days of achieving the maximum production rate or within 180 days of starting operation, whichever comes first. This testing will be required every two years thereafter. Silfab will be required to hire a third-party testing company to perform the testing. SCDES staff will be on-site to ensure the test is done properly.

In addition to stack testing, the facility will be required to monitor certain parameters daily in accordance with the conditions of its air permit to verify compliance with emission limitations and operational requirements. SCDES will perform unannounced inspections to assess operations, inspect the equipment and review monitoring records. The lowering of the stack height to meet county code (and the related appeal) do not impact the testing procedures or frequency.

What amounts of each chemical will be transported to/from Silfab each day/week/month/year?

SCDES doesn't regulate the transport of chemicals. Silfab could provide this information.

How much of each chemical will be stored at Silfab? What safety protocols will be required? How often are they inspected? What qualified contractors will be used for inspections?

SCDES regulates certain substances above certain quantities in tanks and containers.

Silfab has proposed to store two 5,280-gallon tanks of hydrochloric acid (HCl), two 7,925-gallon tanks of hydrogen fluoride (HF) and one 22,983-gallon tank of silane. Silfab will also store diesel fuel on-site to use in emergency generators. Other substances may be stored onsite in quantities that are not regulated. Not every chemical poses a risk to people or the

environment. Pollutants are selected to be regulated based on whether and to what extent they can have negative effects on human health or the environment.

Silfab will be required to submit a risk management plan (RMP) to the EPA that also will be shared with SCDES. This plan will outline how the facility plans to prevent accidental releases and its safety protocols. It will also show how the facility has coordinated its emergency response plan with local emergency response agencies. The facility is required to submit the RMP to EPA before it brings regulated substances on site. Silfab hasn't submitted the RMP to EPA yet. Once submitted, SCDES will review it and schedule a compliance inspection. Once the facility is operating, experienced SCDES staff will conduct unannounced inspections. Contractors are not required and will not be used. The frequency of these inspections hasn't been determined yet.

What risk management testing and evaluations have been completed with 2024 population models?

Silfab will be required to coordinate its emergency response plans with local emergency response agencies. That coordination is required prior to bringing regulated substances onsite and submitting its risk management plan (RMP) to the EPA. The RMP will provide information about possible impacts of a worst-case release scenario and also more realistic release scenarios. These scenarios are generated using modeling software and population data. The local emergency response agencies will use this information to plan for a possible response, and Silfab will be required to perform annual drills/exercises with these local response agencies. If a release has the potential to impact the schools or nearby residents, SCDES strongly encourages Silfab and the local emergency response agencies to include the schools and nearby residents in these exercises.

Why is the Board of Zoning Appeals vote NOT being applied to Silfab?

Zoning and land use decisions are made by city or county zoning authorities. The interpretation, application, and enforcement of county zoning ordinances are outside of the Department's purview.

Why is Silfab not being relocated to a more appropriate location for a safer environmental impact?

The Department doesn't have the authority to dictate where a facility may or may not be located or make zoning decisions. These zoning and land use decisions are made by city or county zoning authorities. The agency's role is to ensure a facility operates in compliance with the environmental permits that are issued in order to protect people's health and the environment.

Have any other solar panel facilities been approved using these chemicals?

Companies produce solar panels differently; no two facilities are identical. SCDES is aware of two existing facilities in operation in Georgia and two recently permitted facilities in South Carolina:

- The existing facilities in Georgia are the Hanwha Q Cells USA facility in White and Suniva Inc., in Norcross.
- The two recently permitted facilities in South Carolina are Silfab Solar in Fort Mill and ES Foundry in Greenwood.

The Greenwood facility is very similar to Silfab and will also use silane, hydrochloric acid (HCl) and hydrogen fluoride (HF) and will have similar air emissions. It's our understanding that the zoning for the Greenwood facility is Light Industrial, however, zoning definitions vary by municipality.

The Georgia facilities use chemicals similar to the chemicals Silfab and ES Foundry plan to use but in smaller quantities.

Of note, the semiconductor industry uses the same types of chemicals and has similar processes and emissions as the solar panel industry. SCDES is aware of at least two semiconductor facilities in the country, in Midland, Mich., and Austin, Texas.

What is the process for auditing and continued testing for solar facilities?

After the facility begins operations, air emission stack testing will be required. The initial stack test for HCl and HF emissions will be required within 45 days of achieving the maximum production rate or within 180 days of starting operation, whichever comes first. This testing will be required every two years thereafter. Silfab will be required to hire a third-party testing company to perform the testing. SCDES staff will be on-site to ensure the test is done properly.

In addition to stack testing, the facility will be required to monitor certain parameters daily in accordance with the conditions of its air permit to verify compliance with emission limitations and operational requirements. SCDES will perform unannounced inspections to assess operations, inspect the equipment and review monitoring records.

What DES resources are experts in solar manufacturing chemical processes? What are their credentials and experience? How long have they worked in the field?

Silfab is the first solar panel production facility to receive an air permit in South Carolina. A second solar panel production facility has received an air permit in Greenwood. More than 2,000 facilities in South Carolina have air permits issued by SCDES (or the former DHEC). Experienced SCDES permitting engineers and inspectors, with various expertise, perform their duties with respect to these 2000+ facilities across South Carolina. There are no specific credentials required for permitting and inspecting solar panel facilities.

What air scrubbing technologies are being used and tested in Silfab plans? Are those used and tested at any other SC facilities?

Silfab will use a wet acid scrubber system to control air toxic emissions. More than 50 facilities across South Carolina use scrubbers to control air emissions every day. Many of these facilities are required to test their scrubbers and have shown compliance with their air permit limits on a regular basis. Scrubber parameters, including pressure drop, liquid flow rate, and pH, will be monitored and recorded daily by Silfab staff to ensure the scrubber system is operating effectively. Also, if the scrubber system becomes inoperable, the process will automatically shut down.

Has DES shared safe chemical handling to emergency management? Please share those plans. How many people will be available to assist in the case of an emergency?

Silfab will be required to coordinate its emergency response plans with local emergency response agencies. That coordination is required prior to bringing regulated substances onsite and submitting its risk management plan (RMP) to the EPA. Local emergency response agencies will use this information to plan for their response, and those agencies will determine the number of people needed to assist with any emergency.

Public copies of risk management plans can be found at <https://cdxapps.epa.gov/olem-rmp-pds/> once they are submitted. Please note that some portions of risk management plans are considered sensitive by state and federal law and will not be available on the public website. Appointments to see the full RMP and this sensitive information must be made in accordance with SC law found at <https://dph.sc.gov/sites/scdph/files/Library/Regulations/R.61-117.pdf> or by visiting a federal reading room. More information about federal reading room appointments can be found at <https://www.epa.gov/rmp/federal-reading-rooms-risk-management-plans-rmp#make%20appointment>.

How were plans tested given proximity to schools, seniors, I77, parks and industry? Please share those tests. Were tests confirmed by outside third parties? When will they be refreshed and reviewed again?

Silfab will be required to coordinate its emergency response plans with local emergency response agencies. No outside third-party tests are required. Silfab will be required to perform annual drills/exercises with these local response agencies. Please see the information above about obtaining access to RMP information.

I asked a question on Tuesday regarding the required RMP and worst-case scenario analysis. I was told by Mr. Norman to ask DES.

The risk management plan (RMP) will provide information about possible impacts of a worst-case release scenario and also more realistic release scenarios. Please see the information above about obtaining access to RMP information.

I went to the website as directed and then when I click on submit follow-up questions it gives me a Microsoft form error. I've tried this on my iPhone and tried on a laptop operating on windows. Can you please ask them to fix?

Due to agency-wide technology changes that took place during the weekend of Sept. 6-9 that temporarily limited some website capabilities, SCDES extended the time frame to submit questions to Sept. 13, 2024. We apologize for this inconvenience. The link for submitting questions was active from Aug. 27-Sept. 7, was impacted by website technology changes Sept. 8-9, and was active again from Sept. 10-15.

Has Silfab submitted their RMP and worst-case scenario analysis? If so, what are the steps to be able to view this?

Silfab has not submitted their RMP and worst-case scenario analysis yet. Public copies of risk management plans can be found at <https://cdxapps.epa.gov/olem-rmp-pds/> once they are submitted. Please note that some portions of risk management plans are considered sensitive by state and federal law and will not be available on the public website. Appointments to see the full RMP with this sensitive information can be made in accordance with South Carolina state law found at <https://dph.sc.gov/sites/scdph/files/Library/Regulations/R.61-117.pdf> or by visiting a federal reading room. More information about federal reading room appointments can be found at <https://www.epa.gov/rmp/federal-reading-rooms-risk-management-plans-rmp#make%20appointment>.

If not, can the state perform a worst-case scenario analysis to determine if the schools can be impacted?

Please see the information above about how to access the RMP.

Is the facility in Washington State handling the same exact materials/product that Silfab proposes here in Ft Mill?

No. The facility in Washington State only assembles solar panels. The chemicals used at the Washington site are for cleaning and soldering the panels. These chemicals are not the same as those proposed for the Fort Mill site.

Is there any other location here in the US that has this type of operation? If so who/where?

Companies produce solar panels differently; no two facilities are identical. SCDES is aware of two existing facilities in operation in Georgia and two recently permitted facilities in South Carolina:

- The existing facilities in Georgia are the Hanwha Q Cells USA facility in White and Suniva Inc., in Norcross.
- The two recently permitting facilities in South Carolina are Silfab Solar in Fort Mill and ES Foundry in Greenwood.

The Greenwood facility is very similar to Silfab and will also use silane, hydrochloric acid (HCl) and hydrogen fluoride (HF) and will have similar air emissions. It's our understanding that the zoning for the Greenwood facility is Light Industrial, however, zoning definitions vary by municipality.

The Georgia facilities use chemicals similar to the chemicals Silfab and ES Foundry plan to use but in smaller quantities.

Of note, the semiconductor industry uses the same types of chemicals and has similar processes and emissions as the solar panel industry. SCDES is aware of at least two semiconductor facilities in the country, in Midland, Mich., and Austin, Texas.

What plans are being made to handle this massive increase in traffic in the local area. School buses have a hard enough time getting in and out.

SCDOT performed a traffic study for this site and is the best agency to answer this question.

How often will they be testing the emissions from the facility?

The initial stack test for hydrochloric acid (HCl) and hydrogen fluoride (HF) emissions will be required within 45 days of achieving the maximum production rate or within 180 days of starting solar production operation, whichever comes first. This testing will be required every two years thereafter. Silfab will be required to hire a third-party testing company to perform the testing. SCDES staff will be on-site to ensure the test is done properly.

In addition to stack testing, the facility will be required to monitor certain parameters daily in accordance with the conditions of its air permit to verify compliance with emission limitations and operational requirements. SCDES will perform unannounced inspections to assess operations, inspect the equipment and review monitoring records.

What will they do if they find Silfab to be in violation of the emission acceptable percentages?

First, SCDES will review the stack test data and report to determine compliance with the air permit. Any potential violations would result in the facility being referred to the enforcement section of the agency's Bureau of Air Quality. If the enforcement section confirms that a violation has occurred, enforcement action would be taken requiring immediate corrective action and possibly civil penalties.

Did DES know that Silfab's initial permit was for distribution, not manufacturing?

No air permit from SCDES is required for the warehousing and distribution of solar panels.

Did DES know that Silfab wanted to manufacture solar panels in a light industrial warehouse?

SCDES was aware Silfab would be using an existing warehouse to produce solar panels and that this warehouse is located in an area that is zoned by the county as Light Industrial District (LI). Zoning and land use decisions are made by city or county zoning authorities. The interpretation, application, and enforcement of county zoning ordinances are outside of the Department's purview. The agency's role is to ensure a facility operates in compliance with the environmental permits that are issued in order to protect people's health and the environment.

Did DES know that the warehouse was in a light industrial zone, not heavy industrial at the time of permit?

SCDES was aware Silfab would be using an existing warehouse located in an area that is zoned by the county as Light Industrial District (LI). Zoning and land use decisions are made by city or county zoning authorities. The interpretation, application, and enforcement of county zoning ordinances are outside of the Department's purview. The agency's role is to ensure a facility operates in compliance with the environmental permits that are issued in order to protect people's health and the environment.

Is it against DES guidelines to manufacture "anything" in a light industrial warehouse in SC?

Zoning and land use decisions are made by city or county zoning authorities. The interpretation, application, and enforcement of county zoning ordinances are outside of the Department's purview. The agency's role is to ensure a facility operates in compliance with the environmental permits that are issued in order to protect people's health and the environment.

Was DES aware that not 1 but 5 highly toxic chemicals are going to be stored on site 24/7? Including storage of waste and runoff into the air and ground water? Is DES aware of the amount of each of these chemicals that will be on site 24/7?

Not all chemicals are regulated pollutants. There may be some chemicals stored onsite that are exempt from permitting or may not be regulated by state or federal regulations. All regulated air pollutants, including air toxics, were evaluated and addressed in the air permit. The county conducted the technical review for the stormwater runoff permits for the site. If the facility generates any hazardous waste after it starts operation, it will be required to comply with state and federal hazardous waste generator laws.

Is there any other American manufacturing company that has 2 or more of these toxic chemicals in their manufacturing process: Toluene, Hydrogen Fluoride, Silane, VOCs, Hydrochloric Acid? If so, are these companies in light industrial or heavy industrial zones? Are the companies located in DENSELY populated areas?

Silane is not a regulated air pollutant and not an air toxic. It is regulated as a flammable gas under the risk management program.

There are many facilities in South Carolina and across the country that report emitting toluene, hydrogen fluoride, VOCs and hydrochloric acid emissions annually. In South Carolina, at least 260 facilities report emitting at least one of these pollutants; at least 150 emit two of these pollutants; at least 60 facilities facility emit three of these pollutants; and at least 20 facilities emit all four of these pollutants. Requests for this list can be obtained by contacting our Freedom of Information office.

Please note SCDES does not have zoning information for these locations, as zoning requirements vary by municipality. Some areas have no zoning laws at all.

All facilities that are required to obtain an air permit are required to do an air quality analysis. The air quality analysis performed for Silfab demonstrated that the facility would not exceed any state or federal health-based standards that are protective of public health and the environment beyond the fence line.

Will/Can Silfab use other chemicals that are not listed in their application for permit?

Only regulated air pollutants and regulated substances under the risk management program are required to be listed in the air permit application. Some chemicals may be stored or used onsite in quantities below regulated thresholds or exemption level and, therefore, do not need to be included in the air permit.

Is DES aware that Dow Company will not/does not use HF?

There is no Dow Company facility currently operating in South Carolina. We are not aware of the chemicals this company does or does not use.

Is DES aware that Honeywell does use HF acid? Honeywell had an explosion in 2023 in Louisiana. They ONLY released 850 pounds of HF. Silfab will have two 7,925-gallon tanks/15,850 gallons of HF that will be filled and transported weekly. Plus 22,983 pounds of Silane on site. Not to mention the other 3 chemicals. Was DEC aware of the large quantities of these toxic chemicals that Silfab will have on site 24/7 at time of application?

SCDES is aware of the ongoing U.S. Chemical Safety Board's investigation of the 2023 release of HF from the Honeywell facility in Louisiana.

The storage amounts of silane, HCl, and HF and the air emissions information for three air toxics (HCl, toluene, and HF) were included in Silfab's air permit application. This information was reviewed and evaluated by SCDES.

The air permit establishes limits on air emissions based on the air quality analysis performed. The air quality analysis also demonstrated that the facility would not exceed any state or federal health-based standards that are protective of public health and the environment beyond the fence line.

The facility will be required to comply with the risk management program for silane and hydrochloric acid prior to bringing those substances onsite. Silfab is not subject to the risk management program for hydrogen fluoride because the concentration will be less than 50%.

If one chemical explodes or is released by accident, will it affect any of the other chemicals on site?

Prior to bringing the silane and hydrochloric acid on site, the facility will be required to comply with the risk management program and submit a risk management plan to the U.S. EPA. This plan will show the impacts of possible accidental releases. The facility has not submitted its risk management plan yet. Once the risk management plan is submitted, SCDES staff will review the plan and conduct a compliance inspection. Public copies of risk management plans can be found at <https://cdxapps.epa.gov/olem-rmp-pds/> once they are submitted. Please note that some portions of risk management plans are considered sensitive by state and federal law and will not be available on the public website. Appointments to see the full risk management plan and this sensitive information must be made in accordance with South Carolina state law available at <https://dph.sc.gov/sites/scdph/files/Library/Regulations/R.61-117.pdf> or by visiting a federal reading room. More information about federal reading room appointments can be found at: <https://www.epa.gov/rmp/federal-reading-rooms-risk-management-plans-rmp#make%20appointment>.

Did DES know that the company will manufacture 24/7, there will be no down time?

When a facility submits an air permit application, they are required to assume 24/7 operations to determine the worst-case air emissions, even if the facility does not plan to operate that many hours. If the facility can demonstrate it can meet all state and federal air quality standards operating 24/7, there are no restrictions on hours of operation listed in the air permit. Most facilities that operate 24/7 do shutdown for periods of time to perform routine maintenance.

Does DES take into consideration the location of a manufacturing company with 1 or more toxic chemicals before issuing permits?

The Department does not have the authority to dictate where a facility may or may not be located or make zoning decisions. These zoning and land use decisions are made by city or county zoning authorities. The agency's role is to ensure a facility operates in compliance with the environmental permits that are issued in order to protect people's health and the environment.

An air quality analysis was performed for the three air toxic pollutants, and the analysis demonstrated that the facility would not exceed any state or federal health-based standards that are protective of public health and the environment beyond the fence line.

Does DES consider and survey for surrounding businesses, communities, neighborhoods, apartment complexes, greenways, agricultural farms, theme park AND public schools as well as the number of people living and traveling on roads when issuing permits for manufacturing companies?

The air quality analysis submitted with the permit application considered offsite public receptors (such as schools, businesses, and parks) and demonstrated that the facility would not exceed any state or federal health-based standards that are protective of public health and the environment beyond the fence line.

Was DES aware that there will be 2 public schools 850 to 1,300 feet away from Silfab and these chemicals?

The air quality analysis submitted with the permit application included the location of the 2 new schools and demonstrated that the facility would not exceed any state or federal health-based standards that are protective of public health and the environment beyond the fence line.

I was told Silfab would "self-monitor" b/c SC does not have or provide current monitoring technology. What does self-monitoring entail?

It is standard permitting practice across the country for the monitoring, testing, recordkeeping, and reporting requirements of an air permit to be the responsibility of the facility. The facility may perform the requirements of the permit itself or outsource it to a contractor. SCDES will review all compliance information submitted by the facility (and obtained onsite during unannounced inspections) to determine compliance with the air permit.

I would like to know when a leak or an "event" would warrant public notification. I was told Silfab would not have to provide public notification if resolved in a half hour.

Silfab will be required to coordinate its emergency response plans with local emergency response agencies, and that coordination is required prior to bringing regulated substances onsite and submitting its risk management plan (RMP) to the EPA. The RMP will provide information about possible impacts of a worst-case release scenario and also more realistic release scenarios. The local emergency response agencies will use this information to plan for a possible response. Notifications to the public will be made by the local emergency response agencies and the on-scene incident command as needed.

Facilities are also required to report leaks or releases that exceed a reportable quantity (RQ) that leave the plant property promptly to the EPA National Response Center (NRC) and SCDES. Reportable quantity (RQ) thresholds can be found at <https://www.epa.gov/epcra/consolidated-list-lists>. Reports sent to the NRC are available to the public and can be found at: <https://www.epa.gov/emergency-response/national-response-center>. If a leak or release is below the RQ and does not go offsite, no notification is required.

I read that toxic fluoride cakes and sludge will be deposited in local landfills. Is this true?

The disposal of wastes and landfills are regulated by SCDES's land and waste program. If the facility generates any hazardous wastes after it starts operation, it will be required to notify SCDES and comply with the state and federal hazardous waste generator laws (<https://www.des.sc.gov/programs/bureau-land-waste-management/hazardous-waste/overview-hazardous-waste-generator-requirements>).

The approved amounts of chemicals released 24/7. Are these amounts approved for a residentially heavy area?

When a facility submits an air permit application, they are required to assume 24/7 operations to determine the worst-case air emissions, even if the facility does not plan to operate that many hours. The air quality analysis submitted with the permit application considered offsite public receptors (such as schools, businesses, and parks) and demonstrated that the facility would not exceed any state or federal health-based standards that are protective of public health and the environment beyond the fence line.

Can the EPA provide a risk assessment?

EPA Region 4's Senior Toxicologist provide the following response.

"EPA has evaluated the permitting record for this facility and is providing herein a brief analysis of the risk screening conducted.

Risk Screening:

Hydrochloric Acid, Hydrogen Fluoride, and many other chemicals are covered under section 112 of the Clean Air Act (CAA) for hazardous air pollutants (HAPs) which sets limits on the amount of a chemical a facility emits not the concentration of a chemical found in the ambient or outdoor air. EPA Office of Air Quality and Planning (OAQPS) has developed a set of health-protective limits for long-term (chronic) and short-term (acute) inhalation exposures (Dose-Response Assessment for Assessing Health Risks Associated With Exposure to Hazardous Air Pollutants) that are used to support dose-response and hazard identification for estimating the risk of developing cancer and the level of hazard associated with non-cancer health effects. EPA staff performed a risk screening of Hydrogen Fluoride and Hydrochloric Acid listed in the tables labeled "Standard NO. 8- TOXIC AIR POLLUTANTS ANALYSIS: PHASE 1 and PHASE 2." The concentrations of the gas acids Hydrogen Chloride and Hydrogen Fluoride were not reported as annual concentrations but rather a 24-hour exposure concentration which is representative of acute exposure. Given this information, the risk screening compared the maximum modeled concentrations based on the permitted emissions of the Toxic Air Pollutants (TAPs) against acute dose-response values when available. For example, Hydrochloric Acid's maximum concentration per South Carolina's modeling was reported as 12.18 µg/m³ (Phase 1) and 17.60 µg/m³ (Phase 2) which did not exceed EPA's acute (2,100 µg/m³) screening level. Hydrogen Fluoride's maximum concentration per South Carolina's modeling was reported as 0.65 µg/m³ (Phase 1) and 0.87 µg/m³ (Phase 2). These maximum concentrations did not exceed EPA's

acute (16 µg/m³) screening level. Based upon our evaluations, the permitted emission rates resulted in ambient concentrations below both EPA's and South Carolina's level of concern."

Can the EPA require SC DES to include continuous HAP monitoring?

EPA Region 4's Senior Toxicologist provided the following response.

"EPA notes that there is not presently a source standard for solar panel manufacturing pursuant to Clean Air Act section 112. This facility will be a synthetic minor facility for HAPs, meaning emissions will be restricted below "major source" thresholds of 10 tons per year of individual HAPs, or 25 tons per year of combined HAPs, so there is also no requirement for a case-by-case maximum achievable control technology determination. This means there is no federal requirement to continuously monitor emissions of HCl or HF at the facility.

However, Condition B.1 of the air permit limits overall annual HAP emissions from the facility, and Condition B.6 requires a specific efficiency of wet scrubbers intended to control the emissions of these pollutants. Condition B.6 requires initial and ongoing testing of these scrubbers, which will establish the operational ranges required to be established in Condition B.7. Condition B.8 then requires that several parameters indicating the adequate operation of the scrubbers must be measured and recorded daily. The permit further states at Condition B.8 that "Each scrubber shall be in place and operational whenever processes controlled by it are running." This means that the manufacturing process is required to be controlled to this degree at all times. Conditions B.4 and B.8 require that any deviations from established operational ranges are reported along with any corrective actions at least semiannually, which is consistent with reporting requirements for major sources and other stationary source programs. Should there be downtime for the wet scrubbers, the process should be halted. Permit Condition B.1 requires emissions from malfunctions to be included in determining compliance with the annual emission limits, and as noted above, any deviations from normal operating parameters are recorded and reported. Further, Condition F.5 contains a reporting requirement within 24 hours after the beginning of the malfunction of air pollution control equipment for any discharges lasting for one hour or more. The State will therefore have the information necessary to determine compliance with the permit conditions.

Should there be accidental releases from the storage of these chemicals, that occurrence would not be considered part of normal operation, so the State's risk management plan regulations establish requirements to address this scenario. Specifically, the permit requires the submission of a risk management plan for HCl and for silane. This plan is used to inform local emergency response agencies.

The State's initial response to comments document, along with the newer "Q and A" document at the website identified previously, address some of these issues in greater detail. Please continue to follow up with South Carolina Department of Environmental Services' Air Permitting Division with specific concerns."

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