Efforts Toward Erasing Anxiety over Radiation and Regional Recovery by Alpine

February 19, 2020
Alps Alpine Co., Ltd.
1. Company Profile

2. Efforts Toward Erasing Anxiety over Radioactivity

3. Efforts Toward Regional Restoration
1-1 Corporate Profile

**Basic Data**

Name of company: ALPS ALPINE CO., LTD.
Head office: Outa-ku Tokyo
Representative Director: Toshihiro Kuriyama President & CEO, ALPS-COO
Nobuhiko Komeya Senior Executive Vice President, ALPINE-COO
Established: November 1, 1948
Capital stock: 38.730 billion yen
Company to consolidate: 87
Number of employees: 41,840

Former Alps Electric electronic components segment 21,468
Former Alpine automotive infotainment segment 13,192

Net Sales (Consolidated) 851.332 billion yen

Former Alps Electric electronic components segment 468.605 billion yen
Former Alpine automotive infotainment segment 303.593 billion yen

Net Sales

- **Electronic Components:** 55.0% 468.6 billion yen
- **Automotive Infotainment:** 35.7% 303.5 billion yen
- **Logistics and others:** 9.3% 79.1 billion yen

Data as of the end of September 2019
Alpine Electronics Inc., currently Alps Alpine Co., Ltd. Iwaki-office, develops, manufactures, and sells **audio products for automobiles and information and communication products.**

Located to approximately 40km in distance in a straight line from Fukushima Daiichi Nuclear Power Plant.
Consolidated Financial Results for the Fiscal Year Ended March 31, 2018

Ratio of Net Sales by Business Segment
- Alpine Own Brand 19%
- OEM Automakers 81%

Net Sales by Region
- Japan 12%
- China 16%
- US 33%
- EU 36%
- Asia 3%

Ratio of Net Sales by Product Segment
- Acoustic Systems 20%
- Information and Telecommunication 80%
1-4 Corporate Profile : Products & Customers

Products for After Market

Car Navigation System

- Head Unit
- Speaker / Amp
- Rear Vision Display
- Rear Camera

Exclusive for TOYOTA ALPHARD

Global OEM Customers (Automakers)
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2. Efforts Toward Erasing Anxiety over Radioactivity

3. Efforts Toward Regional Restoration
11 employees quit the company due to anxiety over radioactivity from the nuclear power plant in a half-year from April to September 2011.

### Comments from employees who quit the company between April and September 2011

<table>
<thead>
<tr>
<th>Age</th>
<th>Sex</th>
<th>Family Structure</th>
<th>Reason of leaving</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>Male</td>
<td>Wife &amp; 3 children (age of 7, 3, 1)</td>
<td>His wife became ill due to anxiety over the nuclear power plant. He worried about health of his children and decided to move.</td>
</tr>
<tr>
<td>38</td>
<td>Male</td>
<td>Wife &amp; 1 child (age of 3)</td>
<td>His wife will give birth in Dec. He decided to move to wife’s parent house (Saitama) considering his child(ren).</td>
</tr>
<tr>
<td>36</td>
<td>Male</td>
<td>Wife &amp; 2 children (age of 9, 6)</td>
<td>He decided to move to his home town (Fukuoka) due to anxiety over the nuclear power plant.</td>
</tr>
<tr>
<td>34</td>
<td>Male</td>
<td>Wife</td>
<td>His wife did not agree with living in Iwaki due to anxiety over radioactivity.</td>
</tr>
<tr>
<td>26</td>
<td>Male</td>
<td>Single</td>
<td>He decided to go back to his parent home (Kobe) due to anxiety over the radioactivity from the nuclear power plant.</td>
</tr>
<tr>
<td>30</td>
<td>Male</td>
<td>Wife &amp; 1 child (age of 10)</td>
<td>His wife disagree with living in Iwaki due to anxiety over radioactivity.</td>
</tr>
<tr>
<td>39</td>
<td>Male</td>
<td>Wife &amp; 1 child (age of 3)</td>
<td>His wife and child moved to her parent house (Chiba) due to anxiety over radioactivity. He realized hardness of single life and decided to get a job in Chiba.</td>
</tr>
<tr>
<td>33</td>
<td>Male</td>
<td>Wife &amp; 2 children (age of 8, 5)</td>
<td>His family evacuated to Saitama due to anxiety over radioactivity. Cost of living became doubled and decided to get a job in Saitama.</td>
</tr>
</tbody>
</table>

### Survey in November 2011

- **75 employees** answered that they had problems related to radioactivity from the nuclear power plant.
- **12 employees** answered that their families voluntarily evacuated due to radioactivity from the nuclear power plant.
- **12 employees** answered that their families voluntarily evacuated due to radioactivity from the nuclear power plant.

Lack of persuasive information on safety about radioactivity seemed to make the employees quit the job.

We took security and safety measures to reduce employees who quit the company due to the anxiety over radioactivity from the nuclear power plant.

Start of activities to erase the anxiety.
We gave a lecture to erase anxiety about life and health of employees and their families due to Fukushima nuclear accident, make them acquire accurate knowledge on damage caused by radioactivity and utilize it for their future life.

Held on: Tuesday, October 11, 2011
Participants: 190 persons
Lecturer: Health risk adviser of radiation in Fukushima Prof. of Nagasaki Univ. Noboru Takamura

Contents: Difference between radioactivity and radiation (Becquerel and Sievert)
Half-life (Physical half-life and biological half-life)
External exposure and internal exposure
Radioactive rays and health effect
Radiation exposure, and food and water

Others
Selection of food which does not cause internal exposure
Mental effect affected by radioactivity
Effective use of radiation meters
Points of decontamination
Somatic effect and important points
An employee attended lectures to acquire accurate knowledge on influence of radioactivity before counseling employees and their families to eliminate anxiety over their life and health affected by radioactivity.

Schedule : November 7 – 10, 2011
Attendee  : Yumiko Shiota (Alpine clinic nurse)
Contents  : 1. Nagasaki Atomic Bomb and rescue,  
            (Atomic Bomb Disease Institute: Associate Prof. Mine)
            2. Radiation and basics of radiation exposure,  
               (RI center: Prof. Matsuda)
            3. Medical care for radiation exposure,  
               (Internal medicine no. 2: Lecturer Usami)
            4. Radiation exposure and health effect,  
               (Atomic Bomb Disease Institute: Prof. Takamura)
            5. Radiation exposure and mental health,  
               (Neuropsychiatric: Prof. Ozawa)
We provided **private counselling** after the lecture and answered various questions such as food and children’s health.

Held on: Tuesday, February 11, 2012
Participants: 30 persons
Lecturer: Health risk adviser of radiation in Fukushima
   **Prof. of Nagasaki Univ. Noboru Takamura**
Contents: External exposure and internal exposure
   Radiation and health effect
   Radiation exposure and food/water
   Somatic effect and mental influence
We installed a spatial radiation dose meter in July to emphasize the safety and security to customers and employees. (From July, 2012)

"Visualization" of radiation dose

Reception lobby: Display image
(Emphasizing safety to customers)

Display have been finished in Oct., 2016
**1. All radiation dose data are compiled into database** and made available to employees to centrally manage the information and widely provide materials to erase anxiety.

### 1. Radiation dose measurement in Iwaki-office
1) Cooperating with an NPO and measuring radiation dose monthly at 25 locations in Iwaki office (outdoor) ⇒ Providing information for Iwaki City (NPO)
2) Voluntarily measuring radiation dose at 4 internal locations ⇒ Disclosing it on the internal DB

### 2. Radiation dose measurement at each location
1) Measuring radiation dose inside and outside a dormitory for singles monthly ⇒ Sharing the data on the notice board in the dormitory
2) Measuring radiation dose at Yoshima company house monthly

### 3. Permanent installation of the meter in the yard
A permanent monitoring post installed to make customers visiting IW feel safe ⇒ Visualizing radiation dose in real time.

*Q&A about damage caused by radiation dose and information on municipal services as well.*
We have regularly inspected food used in the staff canteen since September 2012. The inspection results are made available to employees to emphasize safety and security.

We serve dishes cooked using local food.

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### Publishing on the internal DB

<table>
<thead>
<tr>
<th>検体番号</th>
<th>180724-02</th>
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<tbody>
<tr>
<td>報告書作成日</td>
<td>2018年7月24日</td>
</tr>
<tr>
<td>受付日</td>
<td>2018年7月20日</td>
</tr>
<tr>
<td>検体名</td>
<td>放射能測定結果報告書</td>
</tr>
<tr>
<td>食品種類</td>
<td>定食類</td>
</tr>
<tr>
<td>検体数</td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>テスト項目</th>
<th>放射能濃度 (Bq/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cs-134</td>
<td>不検出</td>
</tr>
<tr>
<td>Cs-137</td>
<td>不検出</td>
</tr>
<tr>
<td>I-131</td>
<td>不検出</td>
</tr>
</tbody>
</table>

測定機器

TG150Bベクレルモニター

高分解能グラマウム半導体検出器を使用

※) 検出限界値は20Bq/kg以下にて測定しております。

放射性セシウム

放射性カリウム

K-40は、地球の誕生時から地中に含まれている天然の放射性元素です。

記

いわき市平赤井字田中10-7
TEL:0246-35-6242
FAX:0246-23-7868

放射能測定結果報告書

放射能濃度測定結果報告書

アルパイン食堂

放射能測定結果を下記の通りご報告いたします。

### 特記事項

NPO法人 いわき環境システム
■ Radiation monitoring process certified by TUV Rheinland

Overseas customers drastically decreased after Fukushima No.1 Power Plant Accident (None from Europe: up to Tokyo if any)

Increase in expenses of overseas business trips to make arrangements with customers and concerns about harmful rumors

Acquired a certificate of TUV Rheinland (most authoritative third party organization in Germany)

We acquired a certificate to provide secure and safe products for customers and assure secure and safe labor environment for the employees through reliable measurement of radiation dose

1. Radiation monitoring process certified by TUV Rheinland:

Start of activities to acquire the certificate in February 2012.
1) On-site survey (measurement of radiation dose)
2) Investigation of activities
3) Investigation related to radiation management standards
   • Spatial radiation dose measurement (equipment, procedures, archive)
   • Surface contamination measurement (equipment, procedures, archive)
   • Analytical procedures of radioactive substances
   • Non-conformity criteria, etc.

2. Certificated acquired in October 2012

We display the certificate in the reception lobby so that the customers understand it.

Certification have been expired in Oct., 2016
2-9 Check-ups of Internal Exposure

We purchased a mobile whole body counter in October 2012 and started check-ups of internal exposure.

Equipment: Chair-type whole body counter (made by Fuji Electric)
Detection limit: Cs134 ⇒ 200Bq
                 Cs137 ⇒ 220Bq
(Same value as Iwaki, Fukushima)
Analytical software: MONDAL3 < automatically calculates based on measured value/age
Provided by National Institute for Quantum and Radiological Science and Technology
2-9 Check-ups of Internal Exposure

**Mechanism to measure internal exposure dose**

1. Measure residual radioactive substances and calculate effective dose.
2. For employees and their families of Alpine and Alpine Group

- Measure
- Create analytical data
- Check by a commissioned doctor
- Result Notice
- Applicants
- Questions/counseling
  - (1) In-house nurse (any time)
  - (2) Commissioned doctor (at regular visit)
- Questions Counseling [if any]

Applicants can receive private diagnosis and counseling by Nagasaki Univ. Medical Dept., Prof. Takamura available (Health risk adviser of radiation in Fukushima) via commission contract.

MONDAL3 software used
Same soft as the city and prefecture

<table>
<thead>
<tr>
<th>検査項目</th>
<th>測定時間</th>
<th>計算値</th>
<th>事務機密</th>
<th>1.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>立位型 WBC</td>
<td>180</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

あなたの体内の放射性物質の測定結果から、1年間日常生活的に摂取することにより受けると思われる線量は、約1mSv未満と推定しました。
### 2-9 Check-ups of Internal Exposure

#### State of implementation of check-ups for internal exposure

*(Annually done from October 2012)*

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<thead>
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</thead>
<tbody>
<tr>
<td>No. of people measured</td>
<td>2,839 (1,761 employees, 1,078 family members)</td>
<td>2,077 (1,339 employees, 738 family members)</td>
<td>1,345 (1,000 employees, 345 family members)</td>
<td>625 (419 employees, 206 family members)</td>
<td>491 (389 employees, 102 family members)</td>
<td>371 (300 employees, 72 family members)</td>
</tr>
</tbody>
</table>

#### The number of people measured is decreasing

1. Detailed information on radioactivity was becoming available.
2. People feel a decrease of influence based on lots of information (lecture, data of radiation dose meter located in the yard, results of food inspection, websites of the prefecture and city).
3. Employees assume level of influence by taking check-ups as a representative.
We have measured cesium 134/137 in the check-ups for internal exposure. The number of people whose internal exposure exceeded the detection limit and its prevalence are decreasing every year.

Detection limit Cs134: 200Bq  Cs137: 220Bq  (Same values are used in both Fukushima and Iwaki)

The number of people whose internal exposure exceeded the detection limit (%)

Elderly people who ate wild mushrooms
People with high values are decreasing

No detection FY2017
While many employees were quitting the company due to anxiety over radioactivity from the nuclear power plant, we took various measures to erase the anxiety such as providing lectures and private counselling, establishing an NPO and inspecting food. As a result, the employees gradually stop leaving the company. In addition, we started the check-ups of internal radiation with the whole body counter and visualized the data, which reduced the anxiety and stopped the increase of people who quit the company.
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</tr>
</tbody>
</table>
Iwaki Chamber of Commerce and Industry and other 19 organizations started activities of the NPO “Iwaki Environmental Systems” on April 2, 2012 to attempt to assure regional safety, erase harmful rumors and restore the region.

This was the first case that major organizations in Iwaki cooperate and make efforts for NPO activities and made a big impact at the preparation stage of establishment such as long-term interview by newspaper companies and broadcasters.

The NPO makes efforts toward regional contribution and restoration from a short and long-term viewpoint by cooperating with the government and major companies as well as local government and entities such as dose monitoring in 5800 companies in Iwaki District and training of measurement leaders.

### Business contents of the NPO

<table>
<thead>
<tr>
<th>Business contents of the NPO</th>
<th>Detailed contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Radiation dose monitoring</td>
<td>Monitoring in worksites and its support Processed food inspection Inspection of radioactive substances contained in catering for nursery schools Inspection of radioactive substances contained in catering for schools</td>
</tr>
<tr>
<td>2) Rental service and management of radiation dose meters</td>
<td>Renting radiation dose meters owned by Iwaki City</td>
</tr>
<tr>
<td>3) Public relations concerning radiation</td>
<td>Call center (Inquiries about decontamination of houses, gutters by the road, etc.)</td>
</tr>
<tr>
<td>4) Planning and implementation of restoration events</td>
<td>Cooperation with companies and other organizations to contribute to restoration of Iwaki</td>
</tr>
<tr>
<td>5) Activities of new business for regional restoration</td>
<td>Activities for regional revitalization business</td>
</tr>
</tbody>
</table>
Cooperation with the NPO, "Iwaki Environmental Systems" (2)

We keep measuring spatial radiation dose in the yard (25 points).
We measure the locations monthly and report the data to the NPO (160 companies in the city cooperate and report information to the NPO).
Iwaki City creates and publishes a spatial radiation dose map in the city regularly based on the information provided.

<table>
<thead>
<tr>
<th>测定番号</th>
<th>测定値</th>
<th>测定地種類</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.14</td>
<td>アスファルト</td>
</tr>
<tr>
<td>2</td>
<td>0.11</td>
<td>アスファルト</td>
</tr>
<tr>
<td>3</td>
<td>0.13</td>
<td>アスファルト</td>
</tr>
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</tr>
<tr>
<td>14</td>
<td>0.16</td>
<td>アスファルト</td>
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<tr>
<td>15</td>
<td>0.15</td>
<td>アスファルト</td>
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<tr>
<td>16</td>
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<tr>
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<tr>
<td>18</td>
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<td>19</td>
<td>0.11</td>
<td>アスファルト</td>
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<tr>
<td>25</td>
<td>0.12</td>
<td>アスファルト</td>
</tr>
</tbody>
</table>

Iwaki iMap
https://www.sonicweb-asp.jp/g-iwaki/
3-2 Summer Festival

We held Alpine Summer Festival on August 5, 2011

1. We decided to hold the summer festival in 2011 as well to revitalize Iwaki, and planned and had events that many local people can participate in and enjoy. (Approx. 7,000 people visited including the employees, their families and local people)

2. 1) Hula girl show with the cooperation of Spa Resort Hawaiians
   2) Local gourmet service (we requested restaurants in the area to open stores, 11 restaurants opened their booths in total)
   3) Invitation to town mayors of and local people from Hirono-city and Naraha-city.
August 2011 and 2012, We held Challenge School Charity in Iwaki.

We held a charity event produced by a former Formula-1 racing driver, Ukyo Katayama for school children in the city.

1) Aug. 4 and 5, 2011: held at Chuodai-Minami Primary School and Yoshima Daisan Primary School.

~Face a challenge, beat the challenge!~
An event of Iwaki city, "Ganbappe!, Iwaki Restoration Festival" was held on Saturday, October 1 and Sunday, October 2 in 2011 and we participated in "Iwaki Odori", a dance program in the festival.

Venue: 21st century Forest Park
Participants: 60 employees participated as dancers
Alpine Fire Brigade introduced a fire engine for chemical fire in March 2014.

Alpine’s disaster control manual specifies cooperation with local community and provision of equipment tools in the worksite for the fire brigades during rescue activities and recovery support in disaster.

Equipment and tools that can be provided during rescue activities in disaster:
(1) 1 fire engine for chemical fire, (2) 4 operators for the engine, (3) one 2-ton truck, (4) Other stocks...Satellite phones, helmets, blankets, etc.
Donation of Navigation Systems to Futaba 8 Village Council

- Nov. 2014, We provided **8 Alpine’s car navigation systems** in total when donating compact commercial vehicles for multi-purpose to **Futaba 8 Village Council**.
Sep. 2015, We held an assembly accompanied with Iwaki Volunteer Work by American Football Club of Waseda Univ.

We Invited 99 American football members from Waseda Univ. and 3 staff members from the volunteer center, 102 volunteers in total, and explained efforts toward regional recovery and restoration from the earthquake. We also had a diner party with them and local people who supported the volunteer work at a canteen in the company.

Dishes cooked with local food were immediately consumed.
Cooperation to NSRA

Date: Thursday, Feb. 4, 2016

Nuclear Safety Research Association
Commissioned by MHLW*1 in FY 2015
Project of expert development to respond to workers suffered by radioactivity during emergency work in the nuclear power plant
“Introductory training (Radiation control course)”

Contents
Operation of a radiation dose meter with a whole body counter and offering of the vehicle for a lecture to view the data.

Attendee: 13 persons
- 2 NSRA staff members
- 2 Japan Atomic Energy Agency members
- 8 trainees (medical staff)

*1 MHLW: Ministry of Health, Labor and Welfare
What do we leave from the experience of the earthquake disaster?

1. **Definite understanding of the radiation**
   - Radiation is invisible (Difficult to cancel the uneasiness)
   - Visualization by numbers is only way to feel customer relieved.

2. **Continuation of company activity is biggest contribution**
   (Desired to restore early and contribute to the area asap)
   - Preparation to disaster (BCP, Initial action manual, Water, Gas, etc.)
   - We were able to restore our office/plant by support of Iwaki-city in 2 weeks

What we want to convey in future, or outside of stricken area

We cannot wait for outside support (lose future business!)
- It takes long time if we wait for outside support. (Do revival in ourselves.)
- Cooperation with local administration, company and inhabitants are essential. (Difficult to be settled without cooperation)

3. **Inveterate concern from EU car manufacturer (Experience of Chernobyl)**
   - *We want to convey widely that Fukushima is already alright!*
Thank you for your kind attention.